

# *Planck* 2015 Results: Cosmological Parameter Tables

January 19, 2015

## **Abstract**

These tables summarize the results of *Planck* 2015 parameter estimation exploration results. They include *Planck* HFI data in combination with LFI polarization, *Planck* lensing, as well as additional non-CMB data as detailed in the main parameter papers.

# 1 Introduction

The tables are arranged grouped firstly by cosmological model, and then by data combination. The name tags match those of the full chains also provided on the PLA. They all start with **base** to denote the baseline model, followed by the parameter tags of any additional parameters that are also varied (as defined in the parameter paper). Data combination tags are as follows (see the parameters paper for full description and references):

Data tag	Data used
<b>plikHM</b>	baseline high- $\ell$ <i>Planck</i> power spectra ( <b>plik</b> cross half-mission, $30 \leq l \leq 2508$ )
<b>plikDS</b>	high- $\ell$ <i>Planck</i> ( <b>plik</b> cross detsets, $30 \leq l \leq 2508$ )
<b>CamSpecHM</b>	alternative high- $\ell$ <i>Planck</i> ( <b>CamSpec</b> cross half-mission, $30 \leq l \leq 2500$ )
<b>CamSpecDS</b>	high- $\ell$ <i>Planck</i> ( <b>CamSpec</b> cross detsets, $30 \leq l \leq 2500$ )
<b>lowl</b>	low- $\ell$ <i>Planck</i> temperature (Commander, $2 \leq l \leq 29$ )
<b>lowTEB</b>	low- $\ell$ temperature and LFI polarization (bflike, $2 \leq l \leq 29$ )
<b>lowEB</b>	low- $\ell$ LFI polarization only (bflike, $2 \leq l \leq 29$ )
<b>WMAPTEB</b>	low- $\ell$ temperature, and LFI+WMAP polarization (bflike, $2 \leq l \leq 29$ )
<b>lensing</b>	<i>Planck</i> lensing power spectrum reconstruction
<b>lenonly</b>	<i>Planck</i> lensing power spectrum reconstruction only; T,E fixed to best-fit spectrum + priors
<b>zre6p5</b>	A hard prior $z_{\text{re}} > 6.5$
<b>tau07</b>	A Gaussian prior $\tau = 0.07 \pm 0.02$
<b>reion</b>	A hard prior $z_{\text{re}} > 6.5$ , combined with Gaussian prior $z_{\text{re}} = 7 \pm 1$
<b>BAO</b>	Baryon oscillation data from DR11LOWZ, DR11CMASS, MGS and 6DF
<b>JLA</b>	Supernova data from the SDSS-II/SNLS3 Joint Light-curve Analysis
<b>H070p6</b>	A conservative Hubble parameter constraint, $H_0 = 70.6 \pm 3.3$ (Efsthathiou; arXiv:1311.3461)
<b>theta</b>	$100\theta_{\text{MC}}$ fixed to 1.0408
<b>WMAP</b>	The full WMAP (temperature and polarization) 9 year data
<b>WOnlyHeymans</b>	Conservative cut of the CFHTLenS weak lensing data + priors

The high- $\ell$  *Planck* likelihoods have **TT**, **TE**, **EE** variants from each spectrum alone, plus the **TTTEEE** joint constraint.

Data likelihoods are either included when running the chains, or by importance sampling. Data combinations that are added by importance sampling appear at the end of the list, following the **post\_** tag. Note that the best fits are merely examples of parameter combinations that fit the data well, due to parameter degeneracies there may be other combinations of parameters that fit the data nearly equally well.

Beneath each table is the  $\chi^2_{\text{eff}} = -2\log(\text{likelihood})$  for each best fit model, and also the contributions coming from each separate part of the likelihood. Mean minus log likelihoods are also given,  $\bar{\chi}^2_{\text{eff}}$ . The tables also give the  $\chi^2_{\text{eff}}$  of the various component parts of the likelihood, where quoted values are the best-fit and mean, standard deviation (in the case of 1-sigma tables), or effective degrees of freedom ( $\nu$ , defined by  $\sigma^2/2$ ).

The  $R - 1$  value is also given, which measures the convergence of the sampling chains, with small values being better converged. The sampling uncertainty on quoted mean values are typically of order  $R - 1$  in units of the standard deviation.

# Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Baseline model</b>	<b>12</b>
2.1	base_plikHM_TT_lowTEB . . . . .	12
2.2	base_plikHM_TT_lowTEB_post_BAO . . . . .	13
2.3	base_plikHM_TT_lowTEB_post_JLA . . . . .	14
2.4	base_plikHM_TT_lowTEB_post_H070p6 . . . . .	15
2.5	base_plikHM_TT_lowTEB_post_zre6p5 . . . . .	16
2.6	base_plikHM_TTTEEE_lowTEB . . . . .	17
2.7	base_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	18
2.8	base_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	19
2.9	base_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	20
2.10	base_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	21
2.11	base_plikHM_TE_lowTEB . . . . .	22
2.12	base_plikHM_EE_lowTEB . . . . .	23
2.13	base_plikHM_TE_lowEB . . . . .	24
2.14	base_plikHM_EE_lowEB . . . . .	25
2.15	base_plikHM_TT_lowEB . . . . .	26
2.16	base_plikHM_TTTEEE_lowEB . . . . .	27
2.17	base_plikHM_TT_tau07 . . . . .	28
2.18	base_plikHM_TTTEEE_tau07 . . . . .	29
2.19	base_plikHM_TT_lowl . . . . .	30
2.20	base_plikHM_TT_lowl_post_BAO . . . . .	31
2.21	base_plikHM_TT_lowl_post_BAO_H070p6_JLA . . . . .	32
2.22	base_plikHM_TT_lowl_post_zre6p5 . . . . .	33
2.23	base_plikHM_TT_lowl_post_BAO_zre6p5 . . . . .	34
2.24	base_plikHM_TTTEEE_lowl . . . . .	35
2.25	base_plikHM_TTTEEE_lowl_post_BAO . . . . .	36
2.26	base_plikHM_TTTEEE_lowl_post_BAO_H070p6_JLA . . . . .	37
2.27	base_plikHM_TTTEEE_lowl_post_zre6p5 . . . . .	38
2.28	base_plikHM_TTTEEE_lowl_post_BAO_zre6p5 . . . . .	39
2.29	base_plikHM_TT_lowl_lensing . . . . .	40
2.30	base_plikHM_TT_lowl_lensing_post_BAO . . . . .	41
2.31	base_plikHM_TT_lowl_lensing_post_BAO_H070p6_JLA . . . . .	42
2.32	base_plikHM_TT_lowl_lensing_post_zre6p5 . . . . .	43
2.33	base_plikHM_TT_lowl_lensing_post_BAO_zre6p5 . . . . .	44
2.34	base_plikHM_TT_lowl_lensing_post_reion . . . . .	45
2.35	base_plikHM_TTTEEE_lowl_lensing . . . . .	46
2.36	base_plikHM_TTTEEE_lowl_lensing_post_BAO . . . . .	47
2.37	base_plikHM_TTTEEE_lowl_lensing_post_BAO_H070p6_JLA . . . . .	48
2.38	base_plikHM_TTTEEE_lowl_lensing_post_zre6p5 . . . . .	49
2.39	base_plikHM_TTTEEE_lowl_lensing_post_BAO_zre6p5 . . . . .	50
2.40	base_plikHM_TTTEEE_lowl_lensing_post_reion . . . . .	51
2.41	base_plikHM_TT_lowl_reion . . . . .	52
2.42	base_plikHM_TT_lowl_reion_post_BAO . . . . .	53
2.43	base_plikHM_TT_lowl_reion_post_BAO_H070p6_JLA . . . . .	54
2.44	base_plikHM_TTTEEE_lowl_reion . . . . .	55
2.45	base_plikHM_TTTEEE_lowl_reion_post_BAO . . . . .	56
2.46	base_plikHM_TTTEEE_lowl_reion_post_BAO_H070p6_JLA . . . . .	57

2.47	base_plikHM_TE . . . . .	58
2.48	base_plikHM_TE_post_BAO . . . . .	59
2.49	base_plikHM_TE_post_BAO_H070p6_JLA . . . . .	60
2.50	base_plikHM_EE . . . . .	61
2.51	base_plikHM_EE_post_BAO . . . . .	62
2.52	base_plikHM_EE_post_BAO_H070p6_JLA . . . . .	63
2.53	base_plikHM_TE_lensing . . . . .	64
2.54	base_plikHM_TE_lensing_post_BAO . . . . .	65
2.55	base_plikHM_TE_lensing_post_BAO_H070p6_JLA . . . . .	66
2.56	base_plikHM_EE_lensing . . . . .	67
2.57	base_plikHM_EE_lensing_post_BAO . . . . .	68
2.58	base_plikHM_EE_lensing_post_BAO_H070p6_JLA . . . . .	69
2.59	base_plikHM_TT_lowTEB_lensing . . . . .	70
2.60	base_plikHM_TT_lowTEB_lensing_post_BAO . . . . .	71
2.61	base_plikHM_TT_lowTEB_lensing_post_JLA . . . . .	72
2.62	base_plikHM_TT_lowTEB_lensing_post_H070p6 . . . . .	73
2.63	base_plikHM_TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	74
2.64	base_plikHM_TT_lowTEB_lensing_post_zre6p5 . . . . .	75
2.65	base_plikHM_TT_lowTEB_lensing_post_BAO_zre6p5 . . . . .	76
2.66	base_plikHM_TT_lowTEB_lensing_post_reion . . . . .	77
2.67	base_plikHM_TTTEEE_lowTEB_lensing . . . . .	78
2.68	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO . . . . .	79
2.69	base_plikHM_TTTEEE_lowTEB_lensing_post_JLA . . . . .	80
2.70	base_plikHM_TTTEEE_lowTEB_lensing_post_H070p6 . . . . .	81
2.71	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	82
2.72	base_plikHM_TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	83
2.73	base_plikHM_TTTEEE_lowTEB_lensing_post_BAO_zre6p5 . . . . .	84
2.74	base_plikHM_TTTEEE_lowTEB_lensing_post_reion . . . . .	85
2.75	base_lenonly . . . . .	86
2.76	base_lenonly_BAO . . . . .	87
2.77	base_lenonly_theta . . . . .	88
2.78	base_lenonly_BAO_theta . . . . .	89
2.79	base_WMAP . . . . .	90
2.80	base_WMAP_post_BAO . . . . .	91
2.81	base_plikHM_TT_WMAPTEB . . . . .	92
2.82	base_plikHM_TT_WMAPTEB_post_lensing . . . . .	93
2.83	base_plikHM_TT_WMAPTEB_post_BAO . . . . .	94
2.84	base_plikHM_TT_WMAPTEB_post_BAO_lensing . . . . .	95
<b>3</b>	<b>Alens</b>	<b>96</b>
3.1	base_Alens_plikHM_TT_lowTEB . . . . .	96
3.2	base_Alens_plikHM_TT_lowTEB_post_BAO . . . . .	97
3.3	base_Alens_plikHM_TT_lowTEB_post_JLA . . . . .	98
3.4	base_Alens_plikHM_TT_lowTEB_post_H070p6 . . . . .	99
3.5	base_Alens_plikHM_TT_lowTEB_post_zre6p5 . . . . .	100
3.6	base_Alens_plikHM_TTTEEE_lowTEB . . . . .	101
3.7	base_Alens_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	102
3.8	base_Alens_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	103
3.9	base_Alens_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	104
3.10	base_Alens_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	105

3.11	base_Alens_plikHM_TE_lowTEB . . . . .	106
3.12	base_Alens_plikHM_EE_lowTEB . . . . .	107
3.13	base_Alens_plikHM_TE_lowEB . . . . .	108
3.14	base_Alens_plikHM_EE_lowEB . . . . .	109
3.15	base_Alens_plikHM_TT_lowEB . . . . .	110
3.16	base_Alens_plikHM_TTTEEE_lowEB . . . . .	111
3.17	base_Alens_plikHM_TT_tau07 . . . . .	112
3.18	base_Alens_plikHM_TTTEEE_tau07 . . . . .	113
3.19	base_Alens_plikHM_TT_lowTEB_lensing . . . . .	114
3.20	base_Alens_plikHM_TT_lowTEB_lensing_post_BAO . . . . .	115
3.21	base_Alens_plikHM_TTTEEE_lowTEB_lensing . . . . .	116
3.22	base_Alens_plikHM_TTTEEE_lowTEB_lensing_post_BAO . . . . .	117
3.23	base_Alens_plikHM_TT_WMAPTEB . . . . .	118
3.24	base_Alens_plikHM_TT_WMAPTEB_post_BAO . . . . .	119
<b>4</b>	<b>Alensf</b>	<b>120</b>
4.1	base_Alensf_plikHM_TT_lowTEB . . . . .	120
4.2	base_Alensf_plikHM_TTTEEE_lowTEB . . . . .	121
4.3	base_Alensf_plikHM_TT_lowTEB_lensing . . . . .	122
4.4	base_Alensf_plikHM_TTTEEE_lowTEB_lensing . . . . .	123
<b>5</b>	<b>Ahiphi</b>	<b>124</b>
5.1	base_Ahiphi_plikHM_TT_lowTEB_lensing . . . . .	124
5.2	base_Ahiphi_plikHM_TTTEEE_lowTEB_lensing . . . . .	125
<b>6</b>	<b>alpha1</b>	<b>126</b>
6.1	base_alpha1_plikHM_TT_lowTEB . . . . .	126
6.2	base_alpha1_plikHM_TT_lowTEB_post_BAO . . . . .	127
6.3	base_alpha1_plikHM_TT_lowTEB_post_JLA . . . . .	128
6.4	base_alpha1_plikHM_TT_lowTEB_post_lensing . . . . .	129
6.5	base_alpha1_plikHM_TT_lowTEB_post_H070p6 . . . . .	130
6.6	base_alpha1_plikHM_TT_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	131
6.7	base_alpha1_plikHM_TT_lowTEB_post_zre6p5 . . . . .	132
6.8	base_alpha1_plikHM_TTTEEE_lowTEB . . . . .	133
6.9	base_alpha1_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	134
6.10	base_alpha1_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	135
6.11	base_alpha1_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	136
6.12	base_alpha1_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	137
6.13	base_alpha1_plikHM_TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	138
6.14	base_alpha1_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	139
<b>7</b>	<b>mnu</b>	<b>140</b>
7.1	base_mnu_plikHM_TT_lowTEB . . . . .	140
7.2	base_mnu_plikHM_TT_lowTEB_post_JLA . . . . .	141
7.3	base_mnu_plikHM_TT_lowTEB_post_H070p6 . . . . .	142
7.4	base_mnu_plikHM_TT_lowTEB_post_zre6p5 . . . . .	143
7.5	base_mnu_plikHM_TTTEEE_lowTEB . . . . .	144
7.6	base_mnu_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	145
7.7	base_mnu_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	146
7.8	base_mnu_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	147
7.9	base_mnu_plikHM_TE_lowTEB . . . . .	148

7.10	base_mnu_plikHM_EE_lowTEB . . . . .	149
7.11	base_mnu_plikHM_TE_lowEB . . . . .	150
7.12	base_mnu_plikHM_EE_lowEB . . . . .	151
7.13	base_mnu_plikHM_TT_lowl_lensing . . . . .	152
7.14	base_mnu_plikHM_TT_lowl_lensing_post_BAO . . . . .	153
7.15	base_mnu_plikHM_TT_lowl_lensing_post_BAO_H070p6_JLA . . . . .	154
7.16	base_mnu_plikHM_TTTEEE_lowl_lensing . . . . .	155
7.17	base_mnu_plikHM_TTTEEE_lowl_lensing_post_BAO . . . . .	156
7.18	base_mnu_plikHM_TTTEEE_lowl_lensing_post_BAO_H070p6_JLA . . . . .	158
7.19	base_mnu_plikHM_TT_lowTEB_lensing . . . . .	159
7.20	base_mnu_plikHM_TTTEEE_lowTEB_lensing . . . . .	160
7.21	base_mnu_plikHM_TT_lowTEB_BAO . . . . .	161
7.22	base_mnu_plikHM_TT_lowTEB_BAO_post_H070p6 . . . . .	162
7.23	base_mnu_plikHM_TT_lowTEB_BAO_post_H070p6_JLA . . . . .	163
7.24	base_mnu_plikHM_TTTEEE_lowTEB_BAO . . . . .	164
7.25	base_mnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6 . . . . .	165
7.26	base_mnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA . . . . .	167
7.27	base_mnu_plikHM_TT_lowTEB_lensing_BAO . . . . .	168
7.28	base_mnu_plikHM_TT_lowTEB_lensing_BAO_post_H070p6 . . . . .	169
7.29	base_mnu_plikHM_TT_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	170
7.30	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO . . . . .	171
7.31	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6 . . . . .	172
7.32	base_mnu_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	174
7.33	base_mnu_lenonly . . . . .	175
7.34	base_mnu_lenonly_BAO . . . . .	176
7.35	base_mnu_lenonly_theta . . . . .	177
7.36	base_mnu_lenonly_BAO_theta . . . . .	178
7.37	base_mnu_plikHM_TT_WMAPTEB . . . . .	179
7.38	base_mnu_plikHM_TT_WMAPTEB_post_lensing . . . . .	180
7.39	base_mnu_plikHM_TT_WMAPTEB_post_BAO . . . . .	181
<b>8</b>	<b>mnu+Alens</b>	<b>182</b>
8.1	base_mnu_Alens_plikHM_TT_lowTEB_lensing_BAO . . . . .	182
<b>9</b>	<b>mnu+omegak</b>	<b>183</b>
9.1	base_mnu_omegak_plikHM_TT_lowTEB_lensing_BAO . . . . .	183
<b>10</b>	<b>mnu+w</b>	<b>184</b>
10.1	base_mnu_w_plikHM_TT_lowTEB_lensing_BAO . . . . .	184
<b>11</b>	<b>nnu</b>	<b>185</b>
11.1	base_nnu_plikHM_TT_lowTEB . . . . .	185
11.2	base_nnu_plikHM_TT_lowTEB_post_JLA . . . . .	186
11.3	base_nnu_plikHM_TT_lowTEB_post_lensing . . . . .	187
11.4	base_nnu_plikHM_TT_lowTEB_post_H070p6 . . . . .	188
11.5	base_nnu_plikHM_TT_lowTEB_post_zre6p5 . . . . .	189
11.6	base_nnu_plikHM_TTTEEE_lowTEB . . . . .	190
11.7	base_nnu_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	191
11.8	base_nnu_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	192
11.9	base_nnu_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	193
11.10	base_nnu_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	194

11.11	base_nnu_plikHM_TE_lowTEB	195
11.12	base_nnu_plikHM_EE_lowTEB	196
11.13	base_nnu_plikHM_TE_lowEB	197
11.14	base_nnu_plikHM_EE_lowEB	198
11.15	base_nnu_plikHM_TT_lowEB	199
11.16	base_nnu_plikHM_TTTEEE_lowEB	200
11.17	base_nnu_plikHM_TT_tau07	201
11.18	base_nnu_plikHM_TTTEEE_tau07	202
11.19	base_nnu_plikHM_TT_lowTEB_BAO	203
11.20	base_nnu_plikHM_TT_lowTEB_BAO_post_H070p6_JLA	204
11.21	base_nnu_plikHM_TT_lowTEB_BAO_post_lensing_H070p6_JLA	205
11.22	base_nnu_plikHM_TT_lowTEB_BAO_post_lensing	206
11.23	base_nnu_plikHM_TTTEEE_lowTEB_BAO	207
11.24	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA	208
11.25	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_lensing_H070p6_JLA	209
11.26	base_nnu_plikHM_TTTEEE_lowTEB_BAO_post_lensing	211
11.27	base_nnu_plikHM_TT_lowTEB_nnup39	212
11.28	base_nnu_plikHM_TTTEEE_lowTEB_nnup39	213
11.29	base_nnu_plikHM_TT_lowTEB_nnup57	214
11.30	base_nnu_plikHM_TTTEEE_lowTEB_nnup57	215
11.31	base_nnu_plikHM_TT_lowTEB_nnu1	216
11.32	base_nnu_plikHM_TTTEEE_lowTEB_nnu1	217
11.33	base_nnu_plikHM_TT_lowTEB_nnup39_BAO	218
11.34	base_nnu_plikHM_TT_lowTEB_nnup39_BAO_post_lensing_H070p6_JLA	219
11.35	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_BAO	220
11.36	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_BAO_post_lensing_H070p6_JLA	221
11.37	base_nnu_plikHM_TT_lowTEB_nnup57_BAO	222
11.38	base_nnu_plikHM_TT_lowTEB_nnup57_BAO_post_lensing_H070p6_JLA	223
11.39	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_BAO	224
11.40	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_BAO_post_lensing_H070p6_JLA	225
11.41	base_nnu_plikHM_TT_lowTEB_nnup39_lensing	226
11.42	base_nnu_plikHM_TTTEEE_lowTEB_nnup39_lensing	227
11.43	base_nnu_plikHM_TT_lowTEB_nnup57_lensing	228
11.44	base_nnu_plikHM_TTTEEE_lowTEB_nnup57_lensing	229
11.45	base_nnu_plikHM_TT_lowTEB_nnu1_lensing	230
11.46	base_nnu_plikHM_TTTEEE_lowTEB_nnu1_lensing	231
11.47	base_nnu_lenonly	232
11.48	base_nnu_lenonly_BAO	233
11.49	base_nnu_lenonly_theta	234
11.50	base_nnu_lenonly_BAO_theta	235
11.51	base_nnu_plikHM_TT_WMAPTEB	236
11.52	base_nnu_plikHM_TT_WMAPTEB_post_lensing	237
11.53	base_nnu_plikHM_TT_WMAPTEB_post_BAO	238
<b>12</b>	<b>nnu+meffsterile</b>	<b>239</b>
12.1	base_nnu_meffsterile_plikHM_TT_lowTEB	239
12.2	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB	240
12.3	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing	241
12.4	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing	242
12.5	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO	243

12.6	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO_post_H070p6 . . . . .	244
12.7	base_nnu_meffsterile_plikHM_TT_lowTEB_BAO_post_H070p6_JLA . . . . .	245
12.8	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO . . . . .	246
12.9	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO_post_H070p6 . . . . .	247
12.10	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_BAO_post_H070p6_JLA . . . . .	249
12.11	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO . . . . .	250
12.12	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO_post_H070p6 . . . . .	251
12.13	base_nnu_meffsterile_plikHM_TT_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	252
12.14	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO . . . . .	253
12.15	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6 . . . . .	255
12.16	base_nnu_meffsterile_plikHM_TTTEEE_lowTEB_lensing_BAO_post_H070p6_JLA . . . . .	257
<b>13</b>	<b>nnu+meffsterile+r</b>	<b>259</b>
13.1	base_nnu_meffsterile_r_plikHM_TT_lowTEB_lensing . . . . .	259
13.2	base_nnu_meffsterile_r_plikHM_TTTEEE_lowTEB_lensing . . . . .	260
<b>14</b>	<b>nnu+mnu</b>	<b>262</b>
14.1	base_nnu_mnu_plikHM_TT_lowTEB . . . . .	262
14.2	base_nnu_mnu_plikHM_TT_lowTEB_post_BAO . . . . .	263
14.3	base_nnu_mnu_plikHM_TT_lowTEB_post_H070p6 . . . . .	264
14.4	base_nnu_mnu_plikHM_TT_lowTEB_post_BAO_H070p6_JLA . . . . .	265
14.5	base_nnu_mnu_plikHM_TTTEEE_lowTEB . . . . .	266
14.6	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	267
14.7	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	268
14.8	base_nnu_mnu_plikHM_TTTEEE_lowTEB_post_BAO_H070p6_JLA . . . . .	270
14.9	base_nnu_mnu_plikHM_TT_lowTEB_lensing . . . . .	271
14.10	base_nnu_mnu_plikHM_TT_lowTEB_lensing_post_BAO . . . . .	272
14.11	base_nnu_mnu_plikHM_TTTEEE_lowTEB_lensing . . . . .	273
14.12	base_nnu_mnu_plikHM_TTTEEE_lowTEB_lensing_post_BAO . . . . .	274
<b>15</b>	<b>nnu+r</b>	<b>276</b>
15.1	base_nnu_r_plikHM_TT_lowTEB_nnup39 . . . . .	276
15.2	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup39 . . . . .	277
15.3	base_nnu_r_plikHM_TT_lowTEB_nnup57 . . . . .	278
15.4	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup57 . . . . .	279
15.5	base_nnu_r_plikHM_TT_lowTEB_nnup39_lensing . . . . .	280
15.6	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup39_lensing . . . . .	281
15.7	base_nnu_r_plikHM_TT_lowTEB_nnup57_lensing . . . . .	282
15.8	base_nnu_r_plikHM_TTTEEE_lowTEB_nnup57_lensing . . . . .	283
<b>16</b>	<b>nnu+yhe</b>	<b>284</b>
16.1	base_nnu_yhe_plikHM_TT_lowTEB . . . . .	284
16.2	base_nnu_yhe_plikHM_TT_lowTEB_post_BAO . . . . .	285
16.3	base_nnu_yhe_plikHM_TT_lowTEB_post_H070p6 . . . . .	286
16.4	base_nnu_yhe_plikHM_TT_lowTEB_post_BAO_H070p6_JLA . . . . .	287
16.5	base_nnu_yhe_plikHM_TT_lowTEB_post_lensing . . . . .	288
16.6	base_nnu_yhe_plikHM_TTTEEE_lowTEB . . . . .	289
16.7	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	290
16.8	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	291
16.9	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_BAO_H070p6_JLA . . . . .	292
16.10	base_nnu_yhe_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	293



<b>17</b>	<b>nrun</b>	<b>294</b>
17.1	base_nrun_plikHM.TT_lowTEB . . . . .	294
17.2	base_nrun_plikHM.TT_lowTEB_post_BAO . . . . .	295
17.3	base_nrun_plikHM.TT_lowTEB_post_JLA . . . . .	296
17.4	base_nrun_plikHM.TT_lowTEB_post_lensing . . . . .	297
17.5	base_nrun_plikHM.TT_lowTEB_post_H070p6 . . . . .	298
17.6	base_nrun_plikHM.TT_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	299
17.7	base_nrun_plikHM.TT_lowTEB_post_zre6p5 . . . . .	300
17.8	base_nrun_plikHM.TTTEEE_lowTEB . . . . .	301
17.9	base_nrun_plikHM.TTTEEE_lowTEB_post_BAO . . . . .	302
17.10	base_nrun_plikHM.TTTEEE_lowTEB_post_JLA . . . . .	303
17.11	base_nrun_plikHM.TTTEEE_lowTEB_post_lensing . . . . .	304
17.12	base_nrun_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	305
17.13	base_nrun_plikHM.TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	306
17.14	base_nrun_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	307
17.15	base_nrun_plikHM.TE_lowTEB . . . . .	308
17.16	base_nrun_plikHM.EE_lowTEB . . . . .	309
17.17	base_nrun_plikHM.TE_lowEB . . . . .	310
17.18	base_nrun_plikHM.EE_lowEB . . . . .	311
17.19	base_nrun_plikHM.TT_tau07 . . . . .	312
17.20	base_nrun_plikHM.TTTEEE_tau07 . . . . .	313
<b>18</b>	<b>nrun+r</b>	<b>314</b>
18.1	base_nrun_r_plikHM.TT_lowTEB . . . . .	314
18.2	base_nrun_r_plikHM.TT_lowTEB_post_BAO . . . . .	315
18.3	base_nrun_r_plikHM.TT_lowTEB_post_JLA . . . . .	316
18.4	base_nrun_r_plikHM.TT_lowTEB_post_H070p6 . . . . .	317
18.5	base_nrun_r_plikHM.TT_lowTEB_post_zre6p5 . . . . .	318
18.6	base_nrun_r_plikHM.TTTEEE_lowTEB . . . . .	319
18.7	base_nrun_r_plikHM.TTTEEE_lowTEB_post_BAO . . . . .	321
18.8	base_nrun_r_plikHM.TTTEEE_lowTEB_post_JLA . . . . .	323
18.9	base_nrun_r_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	324
18.10	base_nrun_r_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	325
18.11	base_nrun_r_plikHM.TT_lowTEB_lensing . . . . .	326
18.12	base_nrun_r_plikHM.TT_lowTEB_lensing_post_BAO . . . . .	327
18.13	base_nrun_r_plikHM.TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	328
18.14	base_nrun_r_plikHM.TT_lowTEB_lensing_post_zre6p5 . . . . .	329
18.15	base_nrun_r_plikHM.TTTEEE_lowTEB_lensing . . . . .	330
18.16	base_nrun_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO . . . . .	332
18.17	base_nrun_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	335
18.18	base_nrun_r_plikHM.TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	337
18.19	base_nrun_r_plikHM.TT_WMAPTEB . . . . .	338
18.20	base_nrun_r_plikHM.TT_WMAPTEB_post_lensing . . . . .	339
18.21	base_nrun_r_plikHM.TT_WMAPTEB_post_BAO . . . . .	340
<b>19</b>	<b>omegak</b>	<b>341</b>
19.1	base_omegak_plikHM.TT_lowTEB . . . . .	341
19.2	base_omegak_plikHM.TTTEEE_lowTEB . . . . .	342
19.3	base_omegak_plikHM.TT_lowTEB_BAO . . . . .	343
19.4	base_omegak_plikHM.TT_lowTEB_BAO_post_lensing . . . . .	344
19.5	base_omegak_plikHM.TTTEEE_lowTEB_BAO . . . . .	345

19.6	base_omegak_plikHM.TTTEEE_lowTEB_BAO_post_lensing . . . . .	346
19.7	base_omegak_plikHM.TT_lowTEB_BAO_H070p6_JLA . . . . .	347
19.8	base_omegak_plikHM.TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	348
19.9	base_omegak_plikHM.TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	349
19.10	base_omegak_plikHM.TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	351
19.11	base_omegak_plikHM.TT_lowTEB_lensing . . . . .	352
19.12	base_omegak_plikHM.TTTEEE_lowTEB_lensing . . . . .	353
<b>20</b>	<b>r</b>	<b>354</b>
20.1	base_r_plikHM.TT_lowTEB . . . . .	354
20.2	base_r_plikHM.TT_lowTEB_post_BAO . . . . .	355
20.3	base_r_plikHM.TT_lowTEB_post_JLA . . . . .	356
20.4	base_r_plikHM.TT_lowTEB_post_H070p6 . . . . .	357
20.5	base_r_plikHM.TT_lowTEB_post_zre6p5 . . . . .	358
20.6	base_r_plikHM.TTTEEE_lowTEB . . . . .	359
20.7	base_r_plikHM.TTTEEE_lowTEB_post_BAO . . . . .	360
20.8	base_r_plikHM.TTTEEE_lowTEB_post_JLA . . . . .	362
20.9	base_r_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	363
20.10	base_r_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	364
20.11	base_r_plikHM.TE_lowTEB . . . . .	365
20.12	base_r_plikHM.EE_lowTEB . . . . .	366
20.13	base_r_plikHM.TE_lowEB . . . . .	367
20.14	base_r_plikHM.EE_lowEB . . . . .	368
20.15	base_r_plikHM.TT_lowTEB_lensing . . . . .	369
20.16	base_r_plikHM.TT_lowTEB_lensing_post_BAO . . . . .	370
20.17	base_r_plikHM.TT_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	371
20.18	base_r_plikHM.TT_lowTEB_lensing_post_zre6p5 . . . . .	372
20.19	base_r_plikHM.TTTEEE_lowTEB_lensing . . . . .	373
20.20	base_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO . . . . .	375
20.21	base_r_plikHM.TTTEEE_lowTEB_lensing_post_BAO_H070p6_JLA . . . . .	378
20.22	base_r_plikHM.TTTEEE_lowTEB_lensing_post_zre6p5 . . . . .	380
20.23	base_r_plikHM.TT_WMAPTEB . . . . .	381
20.24	base_r_plikHM.TT_WMAPTEB_post_lensing . . . . .	382
20.25	base_r_plikHM.TT_WMAPTEB_post_BAO . . . . .	383
<b>21</b>	<b>w</b>	<b>384</b>
21.1	base_w_plikHM.TT_lowTEB . . . . .	384
21.2	base_w_plikHM.TT_lowTEB_post_JLA . . . . .	385
21.3	base_w_plikHM.TT_lowTEB_post_lensing . . . . .	386
21.4	base_w_plikHM.TT_lowTEB_post_H070p6 . . . . .	387
21.5	base_w_plikHM.TT_lowTEB_post_zre6p5 . . . . .	388
21.6	base_w_plikHM.TTTEEE_lowTEB . . . . .	389
21.7	base_w_plikHM.TTTEEE_lowTEB_post_lensing . . . . .	390
21.8	base_w_plikHM.TTTEEE_lowTEB_post_H070p6 . . . . .	391
21.9	base_w_plikHM.TTTEEE_lowTEB_post_zre6p5 . . . . .	392
21.10	base_w_plikHM.TT_lowTEB_BAO . . . . .	393
21.11	base_w_plikHM.TT_lowTEB_BAO_post_lensing . . . . .	394
21.12	base_w_plikHM.TTTEEE_lowTEB_BAO . . . . .	395
21.13	base_w_plikHM.TTTEEE_lowTEB_BAO_post_lensing . . . . .	396
21.14	base_w_plikHM.TT_lowTEB_BAO_H070p6_JLA . . . . .	397
21.15	base_w_plikHM.TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	398

21.16	base_w_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	399
21.17	base_w_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	401
<b>22</b>	<b>w+wa</b>	<b>403</b>
22.1	base_w_wa_plikHM_TT_lowTEB_BAO . . . . .	403
22.2	base_w_wa_plikHM_TT_lowTEB_BAO_post_lensing . . . . .	404
22.3	base_w_wa_plikHM_TTTEEE_lowTEB_BAO . . . . .	405
22.4	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_post_lensing . . . . .	406
22.5	base_w_wa_plikHM_TT_lowTEB_BAO_H070p6_JLA . . . . .	407
22.6	base_w_wa_plikHM_TT_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	408
22.7	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA . . . . .	409
22.8	base_w_wa_plikHM_TTTEEE_lowTEB_BAO_H070p6_JLA_post_lensing . . . . .	411
<b>23</b>	<b>yhe</b>	<b>413</b>
23.1	base_yhe_plikHM_TT_lowTEB . . . . .	413
23.2	base_yhe_plikHM_TT_lowTEB_post_BAO . . . . .	414
23.3	base_yhe_plikHM_TT_lowTEB_post_JLA . . . . .	415
23.4	base_yhe_plikHM_TT_lowTEB_post_lensing . . . . .	416
23.5	base_yhe_plikHM_TT_lowTEB_post_H070p6 . . . . .	417
23.6	base_yhe_plikHM_TT_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	418
23.7	base_yhe_plikHM_TT_lowTEB_post_zre6p5 . . . . .	419
23.8	base_yhe_plikHM_TTTEEE_lowTEB . . . . .	420
23.9	base_yhe_plikHM_TTTEEE_lowTEB_post_BAO . . . . .	421
23.10	base_yhe_plikHM_TTTEEE_lowTEB_post_JLA . . . . .	422
23.11	base_yhe_plikHM_TTTEEE_lowTEB_post_lensing . . . . .	423
23.12	base_yhe_plikHM_TTTEEE_lowTEB_post_H070p6 . . . . .	424
23.13	base_yhe_plikHM_TTTEEE_lowTEB_post_lensing_BAO_H070p6_JLA . . . . .	425
23.14	base_yhe_plikHM_TTTEEE_lowTEB_post_zre6p5 . . . . .	426
23.15	base_yhe_plikHM_TE_lowTEB . . . . .	427
23.16	base_yhe_plikHM_EE_lowTEB . . . . .	428
23.17	base_yhe_plikHM_TE_lowEB . . . . .	429
23.18	base_yhe_plikHM_EE_lowEB . . . . .	430
23.19	base_yhe_plikHM_TT_WMAPTEB . . . . .	431
23.20	base_yhe_plikHM_TT_WMAPTEB_post_lensing . . . . .	432
23.21	base_yhe_plikHM_TT_WMAPTEB_post_BAO . . . . .	433

## 2 Baseline model

### 2.1 base\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022242	$0.02222 \pm 0.00023$	$\Omega_m$	0.3149	$0.315 \pm 0.013$	$100\theta_*$	1.041058	$1.04105 \pm 0.00046$
$\Omega_c h^2$	0.11977	$0.1197 \pm 0.0022$	$\Omega_m h^2$	0.14266	$0.1426 \pm 0.0020$	$D_A/\text{Gpc}$	13.8886	$13.891 \pm 0.045$
$100\theta_{\text{MC}}$	1.040862	$1.04085 \pm 0.00047$	$\Omega_m h^3$	0.096020	$0.09597 \pm 0.00045$	$z_{\text{drag}}$	1059.628	$1059.57 \pm 0.46$
$\tau$	0.0781	$0.078 \pm 0.019$	$\sigma_8$	0.8301	$0.829 \pm 0.014$	$r_{\text{drag}}$	147.294	$147.33 \pm 0.49$
$\ln(10^{10} A_s)$	3.0904	$3.089 \pm 0.036$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.466 \pm 0.013$	$k_D$	0.14055	$0.14050 \pm 0.00052$
$n_s$	0.9658	$0.9655 \pm 0.0062$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.621 \pm 0.013$	$100\theta_D$	0.160935	$0.16097 \pm 0.00027$
$y_{\text{cal}}$	1.00030	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0118	$1.011 \pm 0.019$	$z_{\text{eq}}$	3393.7	$3393 \pm 49$
$A_{217}^{\text{CIB}}$	66.6	$63.9 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4991	$2.499 \pm 0.045$	$k_{\text{eq}}$	0.010358	$0.01035 \pm 0.00015$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$z_{\text{re}}$	9.999	$9.9_{-1.6}^{+1.8}$	$100\theta_{\text{eq}}$	0.8144	$0.8147 \pm 0.0092$
$A_{143}^{\text{tSZ}}$	7.14	$5.2 \pm 1.9$	$10^9 A_s$	2.199	$2.198_{-0.085}^{+0.076}$	$100\theta_{s,\text{eq}}$	0.45006	$0.4502 \pm 0.0047$
$A_{100}^{\text{PS}}$	251.8	$257 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8804	$1.880 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07139	$0.07141 \pm 0.00073$
$A_{143}^{\text{PS}}$	39.2	$44 \pm 8$	$D_{40}$	1235.8	$1237 \pm 15$	$H(0.57)$	92.880	$92.88_{-0.45}^{+0.39}$
$A_{143 \times 217}^{\text{PS}}$	33.6	$39 \pm 10$	$D_{220}$	5716.1	$5717 \pm 41$	$D_A(0.57)$	1391.6	$1392 \pm 13$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{810}$	2534.5	$2534 \pm 14$	$F_{\text{AP}}(0.57)$	0.67689	$0.6769 \pm 0.0034$
$A^{\text{kSZ}}$	0.00	$< 4.46$	$D_{1420}$	814.9	$814.5 \pm 5.1$	$f\sigma_8(0.57)$	0.4835	$0.4831 \pm 0.0091$
$A_{100}^{\text{dustTT}}$	7.41	$7.4 \pm 1.9$	$D_{2000}$	230.49	$230.3 \pm 1.9$	$\sigma_8(0.57)$	0.6167	$0.616 \pm 0.011$
$A_{143}^{\text{dustTT}}$	8.98	$8.9 \pm 1.8$	$n_{s,0.002}$	0.9658	$0.9655 \pm 0.0062$	$f_{2000}^{143}$	29.46	$29.9 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.53	$17.1 \pm 4.1$	$Y_{\text{P}}$	0.245336	$0.24532 \pm 0.00010$	$f_{2000}^{143 \times 217}$	32.15	$32.4 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24665 \pm 0.00010$	$f_{2000}^{217}$	105.77	$106.0 \pm 2.0$
$c_{100}$	0.99789	$0.99788 \pm 0.00078$	$10^5 D/H$	2.6156	$2.620 \pm 0.043$	$\chi_{\text{lowTEB}}^2$	10496.47	$10497.4 \pm 2.3$
$c_{217}$	0.99593	$0.9959 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.8113	$13.813 \pm 0.038$	$\chi_{\text{plik}}^2$	763.4	$777.1 \pm 5.7$
$H_0$	67.31	$67.31 \pm 0.96$	$z_*$	1090.062	$1090.09 \pm 0.42$	$\chi_{\text{prior}}^2$	2.08	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6851	$0.685 \pm 0.013$	$r_*$	144.588	$144.61 \pm 0.49$	$\chi_{\text{CMB}}^2$	11259.8	$11274.5 \pm 5.5$

Best-fit  $\chi_{\text{eff}}^2 = 11261.93$ ;  $\bar{\chi}_{\text{eff}}^2 = 11281.82$ ;  $R - 1 = 0.01034$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.47 plik\_dx11dr2\_HM\_v18\_TT: 763.37

## 2.2 base\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022290	$0.02226 \pm 0.00020$	$\Omega_m h^3$	0.096034	$0.09597 \pm 0.00045$	$k_D$	0.140435	$0.14038 \pm 0.00044$
$\Omega_c h^2$	0.11901	$0.1190 \pm 0.0013$	$\sigma_8$	0.8295	$0.829 \pm 0.014$	$100\theta_D$	0.160910	$0.16094 \pm 0.00026$
$100\theta_{MC}$	1.040979	$1.04095 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.4619 \pm 0.0098$	$z_{eq}$	3376.7	$3376 \pm 29$
$\tau$	0.0809	$0.080 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6190	$0.619 \pm 0.011$	$k_{eq}$	0.010306	$0.010304 \pm 0.000090$
$\ln(10^{10} A_s)$	3.0942	$3.093 \pm 0.034$	$\sigma_8/h^{0.5}$	1.0084	$1.008 \pm 0.018$	$100\theta_{eq}$	0.8177	$0.8178 \pm 0.0055$
$n_s$	0.96747	$0.9673 \pm 0.0045$	$\langle d^2 \rangle^{1/2}$	2.4922	$2.492 \pm 0.042$	$100\theta_{s,eq}$	0.45174	$0.4518 \pm 0.0028$
$y_{cal}$	1.00027	$1.0004 \pm 0.0025$	$z_{re}$	10.22	$10.1 \pm 1.6$	$r_{drag}/D_V(0.57)$	0.071659	$0.07165 \pm 0.00043$
$A_{217}^{CIB}$	66.7	$63.7 \pm 6.6$	$10^9 A_s$	2.207	$2.206 \pm 0.076$	$H(0.57)$	93.022	$93.00^{+0.25}_{-0.29}$
$\xi^{tSZ \times CIB}$	0.05	—	$10^9 A_s e^{-2\tau}$	1.8772	$1.877 \pm 0.011$	$D_A(0.57)$	1387.0	$1387.5 \pm 7.7$
$A_{143}^{tSZ}$	7.16	$5.2^{+2.2}_{-1.9}$	$D_{40}$	1233.4	$1234 \pm 13$	$F_{AP}(0.57)$	0.67568	$0.6758 \pm 0.0019$
$A_{100}^{PS}$	251.8	$257 \pm 28$	$D_{220}$	5720.1	$5719 \pm 40$	$f\sigma_8(0.57)$	0.4819	$0.4817 \pm 0.0085$
$A_{143}^{PS}$	39.0	$43 \pm 8$	$D_{810}$	2533.7	$2533 \pm 14$	$\sigma_8(0.57)$	0.6174	$0.617 \pm 0.011$
$A_{143 \times 217}^{PS}$	33.2	$39^{+10}_{-10}$	$D_{1420}$	815.11	$814.8 \pm 4.9$	$f_{2000}^{143}$	29.39	$29.7 \pm 2.9$
$A_{217}^{PS}$	97.2	$97 \pm 10$	$D_{2000}$	230.63	$230.5 \pm 1.8$	$f_{2000}^{143 \times 217}$	31.99	$32.2 \pm 2.1$
$A^{kSZ}$	0.01	$< 4.42$	$n_{s,0.002}$	0.96747	$0.9673 \pm 0.0045$	$f_{2000}^{217}$	105.58	$105.8 \pm 2.0$
$A_{100}^{dustTT}$	7.29	$7.4 \pm 1.9$	$Y_P$	0.245357	$0.245344 \pm 0.000090$	$\chi_{lowTEB}^2$	10496.42	$10497.1 \pm 2.3$
$A_{143}^{dustTT}$	8.99	$9.0 \pm 1.9$	$Y_P^{BBN}$	0.246684	$0.246670 \pm 0.000091$	$\chi_{plik}^2$	763.6	$776.8 \pm 5.7$
$A_{143 \times 217}^{dustTT}$	17.60	$17.1 \pm 4.1$	$10^5 D/H$	2.6065	$2.612 \pm 0.038$	$\chi_{6DF}^2$	0.0225	$0.064 \pm 0.081$
$A_{217}^{dustTT}$	82.1	$81.8 \pm 7.4$	$Age/Gyr$	13.7997	$13.803^{+0.030}_{-0.027}$	$\chi_{MGS}^2$	1.28	$1.33 \pm 0.54$
$c_{100}$	0.99789	$0.99789 \pm 0.00079$	$z_*$	1089.934	$1089.97 \pm 0.30$	$\chi_{DR11CMass}^2$	2.451	$2.91 \pm 0.69$
$c_{217}$	0.99588	$0.9959 \pm 0.0014$	$r_*$	144.748	$144.77 \pm 0.32$	$\chi_{DR11LOWZ}^2$	0.615	$0.77 \pm 0.61$
$H_0$	67.65	$67.63 \pm 0.57$	$100\theta_*$	1.041173	$1.04114 \pm 0.00040$	$\chi_{prior}^2$	2.05	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6899	$0.6896 \pm 0.0076$	$D_A/Gpc$	13.9024	$13.905 \pm 0.031$	$\chi_{CMB}^2$	11260.0	$11274.0 \pm 5.4$
$\Omega_m$	0.3101	$0.3104 \pm 0.0076$	$z_{drag}$	1059.666	$1059.62 \pm 0.44$	$\chi_{BAO}^2$	4.37	$5.1 \pm 1.0$
$\Omega_m h^2$	0.14195	$0.1419 \pm 0.0012$	$r_{drag}$	147.444	$147.47 \pm 0.35$			

Best-fit  $\chi_{eff}^2 = 11266.44$ ;  $\bar{\chi}_{eff}^2 = 11286.37$ ;  $R - 1 = 0.01395$

$\chi_{eff}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - lowl.SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10496.42 plik\_dx11dr2\_HM\_v18\_TT: 763.60

### 2.3 base\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022270	$0.02225 \pm 0.00022$	$\Omega_m h^2$	0.14222	$0.1422 \pm 0.0019$	$z_{\text{drag}}$	1059.666	$1059.61 \pm 0.46$
$\Omega_c h^2$	0.11930	$0.1193 \pm 0.0020$	$\Omega_m h^3$	0.096014	$0.09598 \pm 0.00045$	$r_{\text{drag}}$	147.387	$147.41 \pm 0.46$
$100\theta_{\text{MC}}$	1.040907	$1.04090 \pm 0.00046$	$\sigma_8$	0.8301	$0.829 \pm 0.014$	$k_D$	0.14048	$0.14044 \pm 0.00050$
$\tau$	0.0804	$0.079 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4637	$0.463 \pm 0.012$	$100\theta_D$	0.160916	$0.16095 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0937	$3.092 \pm 0.036$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.620 \pm 0.013$	$z_{\text{eq}}$	3383.1	$3383 \pm 45$
$n_s$	0.9670	$0.9666 \pm 0.0059$	$\sigma_8/h^{0.5}$	1.0103	$1.009 \pm 0.019$	$k_{\text{eq}}$	0.010326	$0.01033 \pm 0.00014$
$y_{\text{cal}}$	1.00026	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4957	$2.495 \pm 0.044$	$100\theta_{\text{eq}}$	0.8164	$0.8165 \pm 0.0086$
$A_{217}^{\text{CIB}}$	66.9	$63.8 \pm 6.6$	$z_{\text{re}}$	10.19	$10.0^{+1.7}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45109	$0.4511 \pm 0.0044$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.206	$2.203^{+0.075}_{-0.084}$	$r_{\text{drag}}/D_V(0.57)$	0.07155	$0.07155 \pm 0.00068$
$A_{143}^{\text{tSZ}}$	7.23	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8781	$1.879 \pm 0.013$	$H(0.57)$	92.960	$92.95^{+0.37}_{-0.42}$
$A_{100}^{\text{PS}}$	251.6	$257 \pm 28$	$D_{40}$	1233.9	$1236 \pm 14$	$D_A(0.57)$	1388.9	$1389 \pm 12$
$A_{143}^{\text{PS}}$	38.3	$43 \pm 8$	$D_{220}$	5716.6	$5719 \pm 40$	$F_{\text{AP}}(0.57)$	0.67616	$0.6762 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$D_{810}$	2533.6	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4828	$0.4823 \pm 0.0090$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$D_{1420}$	814.9	$814.7 \pm 5.1$	$\sigma_8(0.57)$	0.6174	$0.617 \pm 0.011$
$A^{\text{kSZ}}$	0.00	$< 4.42$	$D_{2000}$	230.57	$230.4 \pm 1.9$	$f_{2000}^{143}$	29.30	$29.8 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.44	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9670	$0.9666 \pm 0.0059$	$f_{2000}^{143 \times 217}$	32.03	$32.3 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.9$	$Y_{\text{P}}$	0.245349	$0.24534 \pm 0.00010$	$f_{2000}^{217}$	105.70	$105.9 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.65	$17.0 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246675	$0.24666 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10496.45	$10497.3 \pm 2.3$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.6102	$2.614 \pm 0.042$	$\chi_{\text{plik}}^2$	763.4	$777.1 \pm 5.7$
$c_{100}$	0.99790	$0.99789 \pm 0.00079$	Age/Gyr	13.8050	$13.807 \pm 0.036$	$\chi_{\text{JLA}}^2$	706.764	$706.90 \pm 0.42$
$c_{217}$	0.99592	$0.9959 \pm 0.0014$	$z_*$	1089.986	$1090.01 \pm 0.40$	$\chi_{\text{prior}}^2$	2.11	$7.3 \pm 3.5$
$H_0$	67.51	$67.50 \pm 0.89$	$r_*$	144.688	$144.70 \pm 0.46$	$\chi_{\text{CMB}}^2$	11259.9	$11274.4 \pm 5.5$
$\Omega_\Lambda$	0.6880	$0.688 \pm 0.012$	$100\theta_*$	1.041102	$1.04110 \pm 0.00045$			
$\Omega_m$	0.3120	$0.312 \pm 0.012$	$D_A/\text{Gpc}$	13.8976	$13.899 \pm 0.042$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.74$ ;  $\bar{\chi}_{\text{eff}}^2 = 11988.60$ ;  $R - 1 = 0.01407$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d.2014.10.03.v5c\_Ap: 10496.44 plik\_dx11dr2\_HM\_v18\_TT: 763.42 SN - JLA December\_2013: 706.76

## 2.4 base\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022292	$0.02226 \pm 0.00022$	$\Omega_m h^2$	0.14217	$0.1421 \pm 0.0020$	$z_{\text{drag}}$	1059.704	$1059.63 \pm 0.46$
$\Omega_c h^2$	0.11923	$0.1192 \pm 0.0021$	$\Omega_m h^3$	0.096066	$0.09599 \pm 0.00045$	$r_{\text{drag}}$	147.381	$147.42 \pm 0.47$
$100\theta_{\text{MC}}$	1.040959	$1.04093 \pm 0.00046$	$\sigma_8$	0.8294	$0.829 \pm 0.014$	$k_D$	0.14050	$0.14044 \pm 0.00051$
$\tau$	0.0798	$0.080 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4628	$0.463 \pm 0.013$	$100\theta_D$	0.160896	$0.16094 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0925	$3.092 \pm 0.036$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620 \pm 0.013$	$z_{\text{eq}}$	3382.0	$3381 \pm 47$
$n_s$	0.9673	$0.9669 \pm 0.0060$	$\sigma_8/h^{0.5}$	1.0090	$1.009 \pm 0.019$	$k_{\text{eq}}$	0.010322	$0.01032 \pm 0.00014$
$y_{\text{cal}}$	1.00030	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4927	$2.494 \pm 0.044$	$100\theta_{\text{eq}}$	0.8167	$0.8169 \pm 0.0089$
$A_{217}^{\text{CIB}}$	66.3	$63.7 \pm 6.6$	$z_{\text{re}}$	10.12	$10.1^{+1.7}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45123	$0.4513 \pm 0.0046$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$10^9 A_s$	2.203	$2.205^{+0.075}_{-0.085}$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.07159 \pm 0.00070$
$A_{143}^{\text{tSZ}}$	7.08	$5.2^{+2.1}_{-1.9}$	$10^9 A_s e^{-2\tau}$	1.8783	$1.878 \pm 0.013$	$H(0.57)$	92.996	$92.98 \pm 0.40$
$A_{100}^{\text{PS}}$	251.5	$257 \pm 28$	$D_{40}$	1233.5	$1235 \pm 15$	$D_A(0.57)$	1388.1	$1389 \pm 12$
$A_{143}^{\text{PS}}$	39.4	$43 \pm 8$	$D_{220}$	5719.3	$5719 \pm 40$	$F_{\text{AP}}(0.57)$	0.67600	$0.6761 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	34.6	$39^{+10}_{-10}$	$D_{810}$	2534.4	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4822	$0.4821 \pm 0.0091$
$A_{217}^{\text{PS}}$	98.2	$97 \pm 10$	$D_{1420}$	815.4	$814.8 \pm 5.1$	$\sigma_8(0.57)$	0.6170	$0.617 \pm 0.011$
$A^{\text{kSZ}}$	0.00	$< 4.38$	$D_{2000}$	230.73	$230.5 \pm 1.9$	$f_{2000}^{143}$	29.18	$29.7 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9673	$0.9669 \pm 0.0060$	$f_{2000}^{143 \times 217}$	31.94	$32.2 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.9$	$Y_{\text{P}}$	0.245359	$0.24534 \pm 0.00010$	$f_{2000}^{217}$	105.58	$105.8 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.57	$17.0 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246685	$0.24667 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10496.32	$10497.3 \pm 2.3$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$10^5 D/H$	2.6060	$2.612 \pm 0.043$	$\chi_{\text{plik}}^2$	763.7	$777.2 \pm 5.8$
$c_{100}$	0.99790	$0.99789 \pm 0.00079$	Age/Gyr	13.8010	$13.805 \pm 0.037$	$\chi_{\text{H070p6}}^2$	0.828	$0.91 \pm 0.51$
$c_{217}$	0.99588	$0.9959 \pm 0.0014$	$z_*$	1089.950	$1089.99 \pm 0.41$	$\chi_{\text{prior}}^2$	2.01	$7.3 \pm 3.6$
$H_0$	67.57	$67.55 \pm 0.92$	$r_*$	144.689	$144.72 \pm 0.47$	$\chi_{\text{CMB}}^2$	11260.0	$11274.5 \pm 5.5$
$\Omega_\Lambda$	0.6886	$0.688 \pm 0.013$	$100\theta_*$	1.041149	$1.04112 \pm 0.00045$			
$\Omega_m$	0.3114	$0.312 \pm 0.013$	$D_A/\text{Gpc}$	13.8970	$13.900 \pm 0.043$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.70$ ;  $R - 1 = 0.01476$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.32 plik\_dx11dr2\_HM\_v18\_TT: 763.66 Hubble - H070p6: 0.83

## 2.5 base\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02223 \pm 0.00022$	$\Omega_m$	$0.315 \pm 0.013$	$100\theta_*$	$1.04106 \pm 0.00046$
$\Omega_c h^2$	$0.1197 \pm 0.0021$	$\Omega_m h^2$	$0.1426 \pm 0.0020$	$D_A/\text{Gpc}$	$13.892 \pm 0.044$
$100\theta_{\text{MC}}$	$1.04086 \pm 0.00046$	$\Omega_m h^3$	$0.09598 \pm 0.00045$	$z_{\text{drag}}$	$1059.58 \pm 0.46$
$\tau$	$0.079^{+0.017}_{-0.020}$	$\sigma_8$	$0.830^{+0.013}_{-0.015}$	$r_{\text{drag}}$	$147.33 \pm 0.48$
$\ln(10^{10} A_s)$	$3.091^{+0.031}_{-0.038}$	$\sigma_8 \Omega_m^{0.5}$	$0.466 \pm 0.013$	$k_D$	$0.14050 \pm 0.00052$
$n_s$	$0.9657 \pm 0.0061$	$\sigma_8 \Omega_m^{0.25}$	$0.622 \pm 0.013$	$100\theta_D$	$0.16096 \pm 0.00026$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	$1.012 \pm 0.018$	$z_{\text{eq}}$	$3392 \pm 48$
$A_{217}^{\text{CIB}}$	$63.9 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	$2.500 \pm 0.043$	$k_{\text{eq}}$	$0.01035 \pm 0.00015$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.0 \pm 1.5$	$100\theta_{\text{eq}}$	$0.8149 \pm 0.0091$
$A_{143}^{\text{tSZ}}$	$5.2 \pm 1.9$	$10^9 A_s$	$2.202^{+0.067}_{-0.085}$	$100\theta_{s,\text{eq}}$	$0.4503 \pm 0.0047$
$A_{100}^{\text{PS}}$	$257 \pm 28$	$10^9 A_s e^{-2\tau}$	$1.880 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	$0.07142 \pm 0.00072$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{40}$	$1237 \pm 15$	$H(0.57)$	$92.89^{+0.38}_{-0.44}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{220}$	$5717 \pm 40$	$D_A(0.57)$	$1391 \pm 13$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{810}$	$2534 \pm 14$	$F_{\text{AP}}(0.57)$	$0.6768 \pm 0.0033$
$A^{\text{kSZ}}$	$< 4.43$	$D_{1420}$	$814.5 \pm 5.1$	$f\sigma_8(0.57)$	$0.4834 \pm 0.0089$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$D_{2000}$	$230.3 \pm 1.9$	$\sigma_8(0.57)$	$0.6168^{+0.0096}_{-0.012}$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.9$	$n_{s,0.002}$	$0.9657 \pm 0.0061$	$f_{2000}^{143}$	$29.9 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0 \pm 4.2$	$Y_{\text{P}}$	$0.24533 \pm 0.00010$	$f_{2000}^{143 \times 217}$	$32.3 \pm 2.1$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	$0.24665 \pm 0.00010$	$f_{2000}^{217}$	$105.9 \pm 2.0$
$c_{100}$	$0.99789 \pm 0.00079$	$10^5 D/H$	$2.619 \pm 0.043$	$\chi_{\text{lowTEB}}^2$	$10497.3 \pm 2.3$
$c_{217}$	$0.9959 \pm 0.0014$	$\text{Age}/\text{Gyr}$	$13.812 \pm 0.037$	$\chi_{\text{plik}}^2$	$777.0 \pm 5.6$
$H_0$	$67.33 \pm 0.94$	$z_*$	$1090.08 \pm 0.41$	$\chi_{\text{prior}}^2$	$7.3 \pm 3.5$
$\Omega_\Lambda$	$0.685 \pm 0.013$	$r_*$	$144.62 \pm 0.48$	$\chi_{\text{CMB}}^2$	$11274.4 \pm 5.4$

$$\bar{\chi}_{\text{eff}}^2 = 11281.64; R - 1 = 0.01217$$



## 2.6 base\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022252	$0.02225 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.307	$0.304 \pm 0.085$	$10^5 \text{D/H}$	2.6136	$2.614 \pm 0.030$
$\Omega_c h^2$	0.11987	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	Age/Gyr	13.8133	$13.813 \pm 0.026$
$100\theta_{\text{MC}}$	1.040778	$1.04077 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.338 \pm 0.080$	$z_*$	1090.057	$1090.06 \pm 0.30$
$\tau$	0.0789	$0.079 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.667	$1.67 \pm 0.25$	$r_*$	144.556	$144.57 \pm 0.32$
$\ln(10^{10} A_s)$	3.0929	$3.094 \pm 0.034$	$c_{100}$	0.99818	$0.99815 \pm 0.00077$	$100\theta_*$	1.040967	$1.04096 \pm 0.00032$
$n_s$	0.96475	$0.9645 \pm 0.0049$	$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$D_A/\text{Gpc}$	13.8867	$13.888 \pm 0.030$
$y_{\text{cal}}$	1.00029	$1.0004 \pm 0.0025$	$H_0$	67.25	$67.27 \pm 0.66$	$z_{\text{drag}}$	1059.666	$1059.65 \pm 0.31$
$A_{217}^{\text{CIB}}$	66.4	$63.8 \pm 6.6$	$\Omega_\Lambda$	0.6844	$0.6844 \pm 0.0091$	$r_{\text{drag}}$	147.257	$147.27 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m$	0.3156	$0.3156 \pm 0.0091$	$k_D$	0.140600	$0.14059 \pm 0.00032$
$A_{143}^{\text{tSZ}}$	7.17	$5.4 \pm 1.9$	$\Omega_m h^2$	0.14276	$0.1427 \pm 0.0014$	$100\theta_D$	0.160904	$0.16091 \pm 0.00018$
$A_{100}^{\text{PS}}$	255.0	$260 \pm 28$	$\Omega_m h^3$	0.096013	$0.09601 \pm 0.00029$	$z_{\text{eq}}$	3396.2	$3395 \pm 33$
$A_{143}^{\text{PS}}$	40.1	$43 \pm 8$	$\sigma_8$	0.8310	$0.831 \pm 0.013$	$k_{\text{eq}}$	0.010365	$0.01036 \pm 0.00010$
$A_{143 \times 217}^{\text{PS}}$	36.4	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.4668 \pm 0.0098$	$100\theta_{\text{eq}}$	0.8139	$0.8141 \pm 0.0063$
$A_{217}^{\text{PS}}$	98.7	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6228	$0.623 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.44980	$0.4499 \pm 0.0032$
$A^{\text{kSZ}}$	0.00	$< 4.14$	$\sigma_8/h^{0.5}$	1.0133	$1.013 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.071343	$0.07136 \pm 0.00050$
$A_{100}^{\text{dust}TT}$	7.34	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5056	$2.507 \pm 0.040$	$H(0.57)$	92.857	$92.87 \pm 0.28$
$A_{143}^{\text{dust}TT}$	8.97	$8.9 \pm 1.8$	$z_{\text{re}}$	10.07	$10.0_{-1.5}^{+1.7}$	$D_A(0.57)$	1392.3	$1392.2 \pm 8.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.56	$17.0 \pm 4.1$	$10^9 A_s$	2.204	$2.207 \pm 0.074$	$F_{\text{AP}}(0.57)$	0.67708	$0.6770 \pm 0.0023$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8824	$1.882 \pm 0.012$	$f\sigma_8(0.57)$	0.4842	$0.4842 \pm 0.0080$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0811 \pm 0.0056$	$D_{40}$	1240.0	$1242 \pm 13$	$\sigma_8(0.57)$	0.6171	$0.617 \pm 0.010$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0488 \pm 0.0050$	$D_{220}$	5726.4	$5729 \pm 39$	$f_{2000}^{143}$	29.16	$29.5 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.099 \pm 0.033$	$D_{810}$	2535.8	$2536 \pm 14$	$f_{2000}^{143 \times 217}$	32.13	$32.2 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1001 \pm 0.0069$	$D_{1420}$	814.88	$814.7 \pm 4.8$	$f_{2000}^{217}$	105.74	$105.8 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2236	$0.225 \pm 0.047$	$D_{2000}$	230.48	$230.4 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10496.93	$10497.8 \pm 2.2$
$A_{217}^{\text{dust}EE}$	0.645	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.96475	$0.9645 \pm 0.0049$	$\chi_{\text{plik}}^2$	2431.6	$2450.6 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1417	$0.141 \pm 0.038$	$Y_{\text{P}}$	0.245341	$0.245339 \pm 0.000072$	$\chi_{\text{prior}}^2$	7.0	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.131 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.246667	$0.246665 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12928.6	$12948.4 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 12935.56$ ;  $\bar{\chi}_{\text{eff}}^2 = 12967.69$ ;  $R - 1 = 0.00875$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.93 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.65

## 2.7 base\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022319	$0.02229 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.336 \pm 0.080$	$100\theta_*$	1.041052	$1.04103 \pm 0.00030$
$\Omega_c h^2$	0.11910	$0.1192 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.661	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	13.8998	$13.898 \pm 0.023$
$100\theta_{\text{MC}}$	1.040867	$1.04084 \pm 0.00030$	$c_{100}$	0.99822	$0.99815 \pm 0.00078$	$z_{\text{drag}}$	1059.742	$1059.70 \pm 0.30$
$\tau$	0.0865	$0.082 \pm 0.017$	$c_{217}$	0.99585	$0.9959 \pm 0.0015$	$r_{\text{drag}}$	147.389	$147.38 \pm 0.25$
$\ln(10^{10} A_s)$	3.1063	$3.098 \pm 0.033$	$H_0$	67.610	$67.54 \pm 0.47$	$k_D$	0.140515	$0.14051 \pm 0.00029$
$n_s$	0.96708	$0.9660 \pm 0.0041$	$\Omega_\Lambda$	0.6892	$0.6882 \pm 0.0064$	$100\theta_D$	0.160849	$0.16088 \pm 0.00017$
$y_{\text{cal}}$	1.00020	$1.0004 \pm 0.0025$	$\Omega_m$	0.3108	$0.3118 \pm 0.0064$	$z_{\text{eq}}$	3379.4	$3382 \pm 24$
$A_{217}^{\text{CIB}}$	64.5	$63.7 \pm 6.5$	$\Omega_m h^2$	0.14206	$0.1422 \pm 0.0010$	$k_{\text{eq}}$	0.010314	$0.010323 \pm 0.000073$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\Omega_m h^3$	0.096046	$0.09601 \pm 0.00030$	$100\theta_{\text{eq}}$	0.81721	$0.8167 \pm 0.0045$
$A_{143}^{\text{tSZ}}$	6.99	$5.4^{+2.1}_{-1.9}$	$\sigma_8$	0.8344	$0.831 \pm 0.013$	$100\theta_{s,\text{eq}}$	0.45146	$0.4512 \pm 0.0023$
$A_{100}^{\text{PS}}$	252.8	$259 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.4642 \pm 0.0086$	$r_{\text{drag}}/D_V(0.57)$	0.071609	$0.07156 \pm 0.00035$
$A_{143}^{\text{PS}}$	42.8	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.621 \pm 0.010$	$H(0.57)$	93.007	$92.97 \pm 0.22$
$A_{143 \times 217}^{\text{PS}}$	42.1	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0148	$1.012 \pm 0.016$	$D_A(0.57)$	1387.6	$1388.6 \pm 6.4$
$A_{217}^{\text{PS}}$	101.4	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5091	$2.503 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67585	$0.6761 \pm 0.0016$
$A^{\text{kSZ}}$	0.00	$< 4.05$	$z_{\text{re}}$	10.71	$10.3^{+1.6}_{-1.4}$	$f\sigma_8(0.57)$	0.4850	$0.4834 \pm 0.0079$
$A_{100}^{\text{dust}TT}$	7.35	$7.4 \pm 1.9$	$10^9 A_s$	2.234	$2.217 \pm 0.073$	$\sigma_8(0.57)$	0.6209	$0.618 \pm 0.010$
$A_{143}^{\text{dust}TT}$	8.94	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8789	$1.880 \pm 0.011$	$f_{2000}^{143}$	28.51	$29.3 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.69	$16.9 \pm 4.2$	$D_{40}$	1238.1	$1240 \pm 13$	$f_{2000}^{143 \times 217}$	31.69	$32.0 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.0	$81.5 \pm 7.5$	$D_{220}$	5728.3	$5731 \pm 39$	$f_{2000}^{217}$	105.20	$105.7 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0813 \pm 0.0056$	$D_{810}$	2535.0	$2535 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.42	$10497.7 \pm 2.4$
$A_{100 \times 143}^{\text{dust}EE}$	0.0493	$0.0490 \pm 0.0050$	$D_{1420}$	815.40	$815.0 \pm 4.8$	$\chi_{\text{plik}}^2$	2431.5	$2450.3 \pm 6.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0991	$0.0998 \pm 0.033$	$D_{2000}$	230.88	$230.6 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0293	$0.066 \pm 0.076$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1004 \pm 0.0069$	$n_{s,0.002}$	0.96708	$0.9660 \pm 0.0041$	$\chi_{\text{MGS}}^2$	1.217	$1.21 \pm 0.44$
$A_{143 \times 217}^{\text{dust}EE}$	0.2228	$0.225 \pm 0.047$	$Y_P$	0.245370	$0.245358 \pm 0.000063$	$\chi_{\text{DR11CMass}}^2$	2.496	$2.86 \pm 0.61$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246697	$0.246685 \pm 0.000064$	$\chi_{\text{DR11LOWZ}}^2$	0.68	$0.85 \pm 0.55$
$A_{100}^{\text{dust}TE}$	0.1404	$0.141 \pm 0.038$	$10^5 D/H$	2.6010	$2.606 \pm 0.026$	$\chi_{\text{prior}}^2$	6.8	$19.5 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1315	$0.131 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.8006	$13.804 \pm 0.021$	$\chi_{\text{CMB}}^2$	12929.0	$12948.0 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.085$	$z_*$	1089.904	$1089.95 \pm 0.23$	$\chi_{\text{BAO}}^2$	4.42	$4.99 \pm 0.89$
$A_{143}^{\text{dust}TE}$	0.154	$0.153 \pm 0.054$	$r_*$	144.704	$144.69 \pm 0.24$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.16$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.47$ ;  $R - 1 = 0.00954$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 1.22 DR11CMass: 2.50 DR11LOWZ: 0.68 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.42 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.54

## 2.8 base\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022287	$0.02227 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.160	$0.153 \pm 0.054$	$z_*$	1090.005	$1090.01 \pm 0.29$
$\Omega_c h^2$	0.11976	$0.1196 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.337 \pm 0.080$	$r_*$	144.556	$144.61 \pm 0.31$
$100\theta_{\text{MC}}$	1.040768	$1.04079 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.636	$1.67 \pm 0.25$	$100\theta_*$	1.040959	$1.04099 \pm 0.00032$
$\tau$	0.0829	$0.080 \pm 0.017$	$c_{100}$	0.99829	$0.99815 \pm 0.00078$	$D_A/\text{Gpc}$	13.8868	$13.892 \pm 0.029$
$\ln(10^{10} A_s)$	3.1012	$3.095 \pm 0.033$	$c_{217}$	0.99608	$0.9959 \pm 0.0015$	$z_{\text{drag}}$	1059.742	$1059.67 \pm 0.31$
$n_s$	0.96524	$0.9651 \pm 0.0048$	$H_0$	67.32	$67.37 \pm 0.64$	$r_{\text{drag}}$	147.245	$147.31 \pm 0.30$
$y_{\text{cal}}$	1.00056	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6851	$0.6859 \pm 0.0088$	$k_D$	0.140640	$0.14056 \pm 0.00032$
$A_{217}^{\text{CIB}}$	64.6	$63.8 \pm 6.6$	$\Omega_m$	0.3149	$0.3141 \pm 0.0088$	$100\theta_D$	0.160857	$0.16089 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.23	—	$\Omega_m h^2$	0.14270	$0.1425 \pm 0.0013$	$z_{\text{eq}}$	3394.6	$3390 \pm 32$
$A_{143}^{\text{tSZ}}$	7.52	$5.4^{+2.1}_{-1.9}$	$\Omega_m h^3$	0.096058	$0.09601 \pm 0.00029$	$k_{\text{eq}}$	0.010361	$0.010348 \pm 0.000097$
$A_{100}^{\text{PS}}$	251.8	$259 \pm 28$	$\sigma_8$	0.8341	$0.831 \pm 0.013$	$100\theta_{\text{eq}}$	0.8143	$0.8151 \pm 0.0060$
$A_{143}^{\text{PS}}$	40.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.4658 \pm 0.0096$	$100\theta_{\text{s,eq}}$	0.44997	$0.4504 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6248	$0.622 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.071378	$0.07143 \pm 0.00048$
$A_{217}^{\text{PS}}$	101.1	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0166	$1.013 \pm 0.017$	$H(0.57)$	92.892	$92.91 \pm 0.28$
$A^{\text{kSZ}}$	0.01	$< 4.10$	$\langle d^2 \rangle^{1/2}$	2.5137	$2.505 \pm 0.040$	$D_A(0.57)$	1391.4	$1390.8 \pm 8.5$
$A_{100}^{\text{dust}TT}$	7.54	$7.4 \pm 1.9$	$z_{\text{re}}$	10.41	$10.1^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67689	$0.6767 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	8.97	$8.9 \pm 1.8$	$10^9 A_s$	2.222	$2.211 \pm 0.074$	$f\sigma_8(0.57)$	0.4858	$0.4839 \pm 0.0079$
$A_{143 \times 217}^{\text{dust}TT}$	18.49	$16.9 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8830	$1.881 \pm 0.012$	$\sigma_8(0.57)$	0.6196	$0.618 \pm 0.010$
$A_{217}^{\text{dust}TT}$	83.8	$81.5 \pm 7.5$	$D_{40}$	1241.6	$1241 \pm 13$	$f_{2000}^{143}$	28.82	$29.4 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0812 \pm 0.0056$	$D_{220}$	5731.6	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	32.03	$32.1 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0488 \pm 0.0050$	$D_{810}$	2537.1	$2535 \pm 14$	$f_{2000}^{217}$	105.73	$105.8 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0972	$0.099 \pm 0.033$	$D_{1420}$	815.55	$814.8 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.36	$10497.8 \pm 2.3$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1002 \pm 0.0069$	$D_{2000}$	230.83	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2431.6	$2450.5 \pm 6.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2253	$0.225 \pm 0.047$	$n_{\text{s},0.002}$	0.96524	$0.9651 \pm 0.0048$	$\chi_{\text{JLA}}^2$	706.857	$706.89 \pm 0.31$
$A_{217}^{\text{dust}EE}$	0.681	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245356	$0.245347 \pm 0.000071$	$\chi_{\text{prior}}^2$	6.6	$19.4 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1407	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246683	$0.246673 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12929.0	$12948.3 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1299	$0.131 \pm 0.029$	$10^5 D/H$	2.6070	$2.610 \pm 0.029$			
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.085$	Age/Gyr	13.8095	$13.810 \pm 0.026$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 13674.63$ ;  $R - 1 = 0.00946$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.36 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.61 SN - JLA December\_2013: 706.86

## 2.9 base\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022289	$0.02228 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.153 \pm 0.054$	$z_*$	1089.976	$1090.00 \pm 0.29$
$\Omega_c h^2$	0.11945	$0.1196 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.336 \pm 0.080$	$r_*$	144.636	$144.62 \pm 0.31$
$100\theta_{\text{MC}}$	1.040816	$1.04080 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.666	$1.67 \pm 0.25$	$100\theta_*$	1.041001	$1.04100 \pm 0.00032$
$\tau$	0.0821	$0.081 \pm 0.017$	$c_{100}$	0.99821	$0.99815 \pm 0.00077$	$D_A/\text{Gpc}$	13.8939	$13.892 \pm 0.029$
$\ln(10^{10} A_s)$	3.0983	$3.096 \pm 0.034$	$c_{217}$	0.99586	$0.9959 \pm 0.0015$	$z_{\text{drag}}$	1059.704	$1059.68 \pm 0.31$
$n_s$	0.96608	$0.9652 \pm 0.0049$	$H_0$	67.44	$67.39 \pm 0.65$	$r_{\text{drag}}$	147.328	$147.31 \pm 0.31$
$y_{\text{cal}}$	1.00033	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6870	$0.6861 \pm 0.0089$	$k_D$	0.140557	$0.14056 \pm 0.00032$
$A_{217}^{\text{CIB}}$	65.1	$63.8 \pm 6.6$	$\Omega_m$	0.3130	$0.3139 \pm 0.0089$	$100\theta_D$	0.160870	$0.16089 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.25	—	$\Omega_m h^2$	0.14238	$0.1425 \pm 0.0014$	$z_{\text{eq}}$	3387.1	$3390 \pm 32$
$A_{143}^{\text{tSZ}}$	7.12	$5.4^{+2.1}_{-1.9}$	$\Omega_m h^3$	0.096028	$0.09602 \pm 0.00030$	$k_{\text{eq}}$	0.010338	$0.010345 \pm 0.000099$
$A_{100}^{\text{PS}}$	253.2	$259 \pm 28$	$\sigma_8$	0.8321	$0.831 \pm 0.013$	$100\theta_{\text{eq}}$	0.8157	$0.8153 \pm 0.0061$
$A_{143}^{\text{PS}}$	41.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4655	$0.4656 \pm 0.0097$	$100\theta_{s,\text{eq}}$	0.45069	$0.4505 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	39.9	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6224	$0.622 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.071485	$0.07145 \pm 0.00049$
$A_{217}^{\text{PS}}$	100.7	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0132	$1.013 \pm 0.017$	$H(0.57)$	92.936	$92.92 \pm 0.28$
$A^{\text{kSZ}}$	0.00	$< 4.09$	$\langle d^2 \rangle^{1/2}$	2.5051	$2.505 \pm 0.040$	$D_A(0.57)$	1389.8	$1390.5 \pm 8.7$
$A_{100}^{\text{dust}TT}$	7.39	$7.4 \pm 1.9$	$z_{\text{re}}$	10.33	$10.2^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67642	$0.6766 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	8.99	$8.9 \pm 1.8$	$10^9 A_s$	2.216	$2.212 \pm 0.074$	$f\sigma_8(0.57)$	0.4842	$0.4839 \pm 0.0080$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$16.9 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8806	$1.881 \pm 0.012$	$\sigma_8(0.57)$	0.6186	$0.618 \pm 0.010$
$A_{217}^{\text{dust}TT}$	82.0	$81.5 \pm 7.5$	$D_{40}$	1238.4	$1241 \pm 13$	$f_{2000}^{143}$	28.78	$29.4 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0812 \pm 0.0056$	$D_{220}$	5727.6	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	31.90	$32.1 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0489 \pm 0.0050$	$D_{810}$	2535.7	$2535 \pm 14$	$f_{2000}^{217}$	105.51	$105.7 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1003	$0.099 \pm 0.033$	$D_{1420}$	815.32	$814.9 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.00	$10497.8 \pm 2.3$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1002 \pm 0.0069$	$D_{2000}$	230.73	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2431.8	$2450.6 \pm 6.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2234	$0.225 \pm 0.047$	$n_{s,0.002}$	0.96608	$0.9652 \pm 0.0049$	$\chi_{\text{H070p6}}^2$	0.898	$0.96 \pm 0.37$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$Y_P$	0.245357	$0.245349 \pm 0.000071$	$\chi_{\text{prior}}^2$	6.8	$19.4 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1401	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246684	$0.246676 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12928.8	$12948.4 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	$10^5 D/H$	2.6066	$2.609 \pm 0.030$			
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.304 \pm 0.085$	Age/Gyr	13.8066	$13.809 \pm 0.026$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.48$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.75$ ;  $R - 1 = 0.00925$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.00 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.77 Hubble - H070p6: 0.90

## 2.10 base\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02225 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	$10^5 \text{D/H}$	$2.613 \pm 0.030$
$\Omega_c h^2$	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	Age/Gyr	$13.813 \pm 0.026$
$100\theta_{\text{MC}}$	$1.04077 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	$0.337 \pm 0.080$	$z_*$	$1090.05 \pm 0.30$
$\tau$	$0.080 \pm 0.017$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.25$	$r_*$	$144.57 \pm 0.32$
$\ln(10^{10} A_s)$	$3.095 \pm 0.032$	$c_{100}$	$0.99815 \pm 0.00077$	$100\theta_*$	$1.04097 \pm 0.00032$
$n_s$	$0.9646 \pm 0.0049$	$c_{217}$	$0.9959 \pm 0.0015$	$D_A/\text{Gpc}$	$13.888 \pm 0.029$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$H_0$	$67.28 \pm 0.65$	$z_{\text{drag}}$	$1059.65 \pm 0.31$
$A_{217}^{\text{CIB}}$	$63.8 \pm 6.6$	$\Omega_\Lambda$	$0.6846 \pm 0.0091$	$r_{\text{drag}}$	$147.27 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.3154 \pm 0.0091$	$k_D$	$0.14059 \pm 0.00032$
$A_{143}^{\text{tSZ}}$	$5.4_{-1.9}^{+2.1}$	$\Omega_m h^2$	$0.1427 \pm 0.0014$	$100\theta_D$	$0.16090 \pm 0.00018$
$A_{100}^{\text{PS}}$	$259 \pm 28$	$\Omega_m h^3$	$0.09601 \pm 0.00029$	$z_{\text{eq}}$	$3395 \pm 33$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8$	$0.832_{-0.014}^{+0.013}$	$k_{\text{eq}}$	$0.01036 \pm 0.00010$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	$0.4670 \pm 0.0097$	$100\theta_{\text{eq}}$	$0.8142 \pm 0.0062$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.623 \pm 0.010$	$100\theta_{s,\text{eq}}$	$0.4500 \pm 0.0032$
$A^{\text{kSZ}}$	$< 4.12$	$\sigma_8/h^{0.5}$	$1.014 \pm 0.016$	$r_{\text{drag}}/D_V(0.57)$	$0.07137 \pm 0.00049$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	$2.508 \pm 0.039$	$H(0.57)$	$92.87 \pm 0.28$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$z_{\text{re}}$	$10.1 \pm 1.5$	$D_A(0.57)$	$1392.0 \pm 8.8$
$A_{143 \times 217}^{\text{dust}TT}$	$17.0 \pm 4.2$	$10^9 A_s$	$2.210_{-0.079}^{+0.069}$	$F_{\text{AP}}(0.57)$	$0.6770 \pm 0.0023$
$A_{217}^{\text{dust}TT}$	$81.5 \pm 7.5$	$10^9 A_s e^{-2\tau}$	$1.882 \pm 0.012$	$f\sigma_8(0.57)$	$0.4844 \pm 0.0077$
$A_{100}^{\text{dust}EE}$	$0.0812 \pm 0.0056$	$D_{40}$	$1242 \pm 13$	$\sigma_8(0.57)$	$0.6177 \pm 0.0098$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0488 \pm 0.0050$	$D_{220}$	$5729 \pm 39$	$f_{2000}^{143}$	$29.5 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	$0.099 \pm 0.033$	$D_{810}$	$2536 \pm 14$	$f_{2000}^{143 \times 217}$	$32.2 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.1001 \pm 0.0069$	$D_{1420}$	$814.7 \pm 4.8$	$f_{2000}^{217}$	$105.8 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	$0.225 \pm 0.047$	$D_{2000}$	$230.4 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	$10497.8 \pm 2.3$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$n_{s,0.002}$	$0.9646 \pm 0.0049$	$\chi_{\text{plik}}^2$	$2450.5 \pm 6.8$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P$	$0.245340 \pm 0.000072$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$Y_P^{\text{BBN}}$	$0.246666 \pm 0.000072$	$\chi_{\text{CMB}}^2$	$12948.3 \pm 6.7$

$\bar{\chi}_{\text{eff}}^2 = 12967.68$ ;  $R - 1 = 0.00977$

## 2.11 base\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022396	$0.02239 \pm 0.00025$	$\sigma_8 \Omega_m^{0.5}$	0.4456	$0.445 \pm 0.015$	$D_A/\text{Gpc}$	13.9194	$13.926 \pm 0.044$
$\Omega_c h^2$	0.11803	$0.1177 \pm 0.0020$	$\sigma_8 \Omega_m^{0.25}$	0.5999	$0.599 \pm 0.017$	$z_{\text{drag}}$	1059.86	$1059.82 \pm 0.54$
$100\theta_{\text{MC}}$	1.04099	$1.04103 \pm 0.00052$	$\sigma_8/h^{0.5}$	0.9789	$0.978 \pm 0.026$	$r_{\text{drag}}$	147.587	$147.67 \pm 0.49$
$\tau$	0.0611	$0.061 \pm 0.021$	$\langle d^2 \rangle^{1/2}$	2.413	$2.408 \pm 0.055$	$k_D$	0.14037	$0.14027 \pm 0.00057$
$\ln(10^{10} A_s)$	3.0466	$3.048 \pm 0.045$	$z_{\text{re}}$	8.32	$8.2^{+2.3}_{-1.9}$	$100\theta_D$	0.160794	$0.16082 \pm 0.00032$
$n_s$	0.9727	$0.975 \pm 0.010$	$10^9 A_s$	2.104	$2.109 \pm 0.095$	$z_{\text{eq}}$	3355.6	$3349 \pm 45$
$y_{\text{cal}}$	0.99997	$1.0001 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8623	$1.863 \pm 0.019$	$k_{\text{eq}}$	0.010242	$0.01022 \pm 0.00014$
$A_{100}^{\text{dustTE}}$	0.1363	$0.137 \pm 0.038$	$D_{40}$	1206.0	$1204 \pm 22$	$100\theta_{\text{eq}}$	0.8218	$0.8232 \pm 0.0086$
$A_{100 \times 143}^{\text{dustTE}}$	0.1308	$0.133 \pm 0.029$	$D_{220}$	5679	$5679 \pm 55$	$100\theta_{s,\text{eq}}$	0.45382	$0.4545 \pm 0.0044$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.305 \pm 0.084$	$D_{810}$	2523.1	$2526 \pm 25$	$r_{\text{drag}}/D_V(0.57)$	0.07198	$0.07208 \pm 0.00068$
$A_{143}^{\text{dustTE}}$	0.147	$0.152 \pm 0.054$	$D_{1420}$	814.4	$816 \pm 12$	$H(0.57)$	93.206	$93.25 \pm 0.40$
$A_{143 \times 217}^{\text{dustTE}}$	0.325	$0.334 \pm 0.081$	$D_{2000}$	230.34	$230.9 \pm 4.3$	$D_A(0.57)$	1381.2	$1380 \pm 12$
$A_{217}^{\text{dustTE}}$	1.620	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9727	$0.975 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67418	$0.6738 \pm 0.0030$
$c_{100}$	0.99931	$0.9992 \pm 0.0010$	$Y_P$	0.245404	$0.24540 \pm 0.00011$	$f\sigma_8(0.57)$	0.4678	$0.467 \pm 0.012$
$H_0$	68.09	$68.21 \pm 0.88$	$Y_P^{\text{BBN}}$	0.246731	$0.24673 \pm 0.00011$	$\sigma_8(0.57)$	0.6027	$0.603 \pm 0.015$
$\Omega_\Lambda$	0.6958	$0.697^{+0.013}_{-0.011}$	$10^5 D/H$	2.5865	$2.588 \pm 0.047$	$\chi_{\text{lowTEB}}^2$	10493.50	$10494.5 \pm 1.9$
$\Omega_m$	0.3042	$0.303 \pm 0.012$	Age/Gyr	13.7846	$13.782 \pm 0.038$	$\chi_{\text{plikTE}}^2$	931.73	$938.8 \pm 4.0$
$\Omega_m h^2$	0.14107	$0.1408 \pm 0.0019$	$z_*$	1089.717	$1089.70 \pm 0.41$	$\chi_{\text{prior}}^2$	1.94	$7.9 \pm 3.7$
$\Omega_m h^3$	0.09606	$0.09602 \pm 0.00053$	$r_*$	144.923	$145.00 \pm 0.47$	$\chi_{\text{CMB}}^2$	11425.22	$11433.3 \pm 4.1$
$\sigma_8$	0.8078	$0.808 \pm 0.020$	$100\theta_*$	1.04116	$1.04121 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.16$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.18$ ;  $R - 1 = 0.00601$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.50 plik\_dx11dr2\_HM\_v18\_TE: 931.73

## 2.12 base\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02417	$0.0242 \pm 0.0014$	$\sigma_8 \Omega_m^{0.25}$	0.5707	$0.572^{+0.030}_{-0.034}$	$z_{\text{drag}}$	1063.44	$1063.4 \pm 2.7$
$\Omega_c h^2$	0.11229	$0.1125^{+0.0046}_{-0.0051}$	$\sigma_8/h^{0.5}$	0.9378	$0.940 \pm 0.046$	$r_{\text{drag}}$	147.16	$147.14 \pm 0.77$
$100\theta_{\text{MC}}$	1.04007	$1.04014 \pm 0.00092$	$\langle d^2 \rangle^{1/2}$	2.349	$2.351 \pm 0.085$	$k_{\text{D}}$	0.14201	$0.1420 \pm 0.0014$
$\tau$	0.0651	$0.066 \pm 0.021$	$z_{\text{re}}$	8.19	$8.2^{+2.2}_{-1.8}$	$100\theta_{\text{D}}$	0.15862	$0.1587^{+0.0012}_{-0.0016}$
$\ln(10^{10} A_s)$	3.0719	$3.074 \pm 0.045$	$10^9 A_s$	2.158	$2.164 \pm 0.097$	$z_{\text{eq}}$	3261	$3266^{+83}_{-95}$
$n_s$	0.9867	$0.988 \pm 0.014$	$10^9 A_s e^{-2\tau}$	1.8949	$1.895 \pm 0.026$	$k_{\text{eq}}$	0.009953	$0.00997^{+0.00025}_{-0.00029}$
$y_{\text{cal}}$	0.99998	$1.0000 \pm 0.0025$	$D_{40}$	1223.3	$1221 \pm 30$	$100\theta_{\text{eq}}$	0.8440	$0.844 \pm 0.020$
$A_{100}^{\text{dustEE}}$	0.0824	$0.0826 \pm 0.0059$	$D_{220}$	6000	$5990 \pm 220$	$100\theta_{s,\text{eq}}$	0.4639	$0.4637 \pm 0.0097$
$A_{100 \times 143}^{\text{dustEE}}$	0.0499	$0.0500 \pm 0.0054$	$D_{810}$	2593.4	$2592^{+45}_{-41}$	$r_{\text{drag}}/D_V(0.57)$	0.07385	$0.0739 \pm 0.0019$
$A_{100 \times 217}^{\text{dustEE}}$	0.0990	$0.099 \pm 0.032$	$D_{1420}$	846.8	$846^{+22}_{-19}$	$H(0.57)$	95.03	$95.1^{+1.7}_{-1.9}$
$A_{143}^{\text{dustEE}}$	0.1015	$0.1012 \pm 0.0073$	$D_{2000}$	242.4	$242.3^{+8.4}_{-7.4}$	$D_A(0.57)$	1336.0	$1337 \pm 40$
$A_{143 \times 217}^{\text{dustEE}}$	0.2233	$0.223 \pm 0.046$	$n_{s,0.002}$	0.9867	$0.988 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.6649	$0.6654^{+0.0072}_{-0.0089}$
$A_{217}^{\text{dustEE}}$	0.650	$0.64 \pm 0.13$	$Y_{\text{P}}$	0.24615	$0.24613^{+0.00061}_{-0.00052}$	$f\sigma_8(0.57)$	0.4487	$0.449 \pm 0.022$
$H_0$	71.37	$71.4 \pm 3.0$	$Y_{\text{P}}^{\text{BBN}}$	0.24748	$0.24746^{+0.00061}_{-0.00052}$	$\sigma_8(0.57)$	0.6000	$0.600 \pm 0.015$
$\Omega_{\Lambda}$	0.7309	$0.729^{+0.034}_{-0.025}$	$10^5 \text{D}/\text{H}$	2.287	$2.30^{+0.18}_{-0.24}$	$\chi_{\text{lowTEB}}^2$	10493.61	$10494.8 \pm 2.2$
$\Omega_{\text{m}}$	0.2691	$0.271^{+0.025}_{-0.034}$	Age/Gyr	13.606	$13.60 \pm 0.17$	$\chi_{\text{plikEE}}^2$	751.20	$758.7 \pm 4.5$
$\Omega_{\text{m}} h^2$	0.13711	$0.1373^{+0.0035}_{-0.0040}$	$z_*$	1087.18	$1087.3^{+1.7}_{-2.0}$	$\chi_{\text{prior}}^2$	3.97	$8.3 \pm 3.6$
$\Omega_{\text{m}} h^3$	0.09786	$0.0979 \pm 0.0020$	$r_*$	145.06	$145.02 \pm 0.66$	$\chi_{\text{CMB}}^2$	11244.81	$11253.5 \pm 4.7$
$\sigma_8$	0.7923	$0.793 \pm 0.025$	$100\theta_*$	1.04007	$1.04014 \pm 0.00089$			
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4110	$0.413^{+0.031}_{-0.037}$	$D_A/\text{Gpc}$	13.947	$13.942 \pm 0.062$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 11261.82$ ;  $R - 1 = 0.00601$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.61 plik\_dx11dr2\_HM\_v18\_EE: 751.20

### 2.13 base\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022319	$0.02228 \pm 0.00025$	$\sigma_8 \Omega_m^{0.5}$	0.4457	$0.446 \pm 0.015$	$D_A/\text{Gpc}$	13.9074	$13.911 \pm 0.046$
$\Omega_c h^2$	0.11874	$0.1187 \pm 0.0021$	$\sigma_8 \Omega_m^{0.25}$	0.5980	$0.598 \pm 0.016$	$z_{\text{drag}}$	1059.74	$1059.63 \pm 0.54$
$100\theta_{\text{MC}}$	1.04096	$1.04094 \pm 0.00051$	$\sigma_8/h^{0.5}$	0.9747	$0.975 \pm 0.024$	$r_{\text{drag}}$	147.48	$147.53 \pm 0.50$
$\tau$	0.0527	$0.053 \pm 0.019$	$\langle d^2 \rangle^{1/2}$	2.418	$2.419 \pm 0.056$	$k_D$	0.14041	$0.14033 \pm 0.00058$
$\ln(10^{10} A_s)$	3.0322	$3.031 \pm 0.041$	$z_{\text{re}}$	7.51	$7.4^{+2.4}_{-1.7}$	$100\theta_D$	0.160876	$0.16093 \pm 0.00032$
$n_s$	0.9652	$0.965 \pm 0.012$	$10^9 A_s$	2.074	$2.074 \pm 0.086$	$z_{\text{eq}}$	3370.8	$3370 \pm 47$
$y_{\text{cal}}$	1.00013	$1.0001 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8666	$1.865 \pm 0.019$	$k_{\text{eq}}$	0.010288	$0.01029 \pm 0.00014$
$A_{100}^{\text{dustTE}}$	0.1330	$0.137 \pm 0.038$	$D_{40}$	1222.9	$1225 \pm 27$	$100\theta_{\text{eq}}$	0.8188	$0.8189 \pm 0.0090$
$A_{100 \times 143}^{\text{dustTE}}$	0.1336	$0.133 \pm 0.029$	$D_{220}$	5709	$5704 \pm 59$	$100\theta_{s,\text{eq}}$	0.45232	$0.4524 \pm 0.0046$
$A_{100 \times 217}^{\text{dustTE}}$	0.316	$0.302 \pm 0.084$	$D_{810}$	2521.3	$2519 \pm 26$	$r_{\text{drag}}/D_V(0.57)$	0.07174	$0.07174 \pm 0.00070$
$A_{143}^{\text{dustTE}}$	0.155	$0.154 \pm 0.054$	$D_{1420}$	810.7	$809 \pm 12$	$H(0.57)$	93.069	$93.04 \pm 0.41$
$A_{143 \times 217}^{\text{dustTE}}$	0.351	$0.334 \pm 0.080$	$D_{2000}$	228.63	$228.2 \pm 4.5$	$D_A(0.57)$	1385.5	$1386 \pm 12$
$A_{217}^{\text{dustTE}}$	1.662	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9652	$0.965 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67527	$0.6754 \pm 0.0032$
$c_{100}$	0.99919	$0.9993 \pm 0.0010$	$Y_P$	0.245370	$0.24535 \pm 0.00012$	$f\sigma_8(0.57)$	0.4658	$0.466 \pm 0.012$
$H_0$	67.77	$67.73 \pm 0.92$	$Y_P^{\text{BBN}}$	0.246697	$0.24668 \pm 0.00012$	$\sigma_8(0.57)$	0.5976	$0.597 \pm 0.013$
$\Omega_\Lambda$	0.6915	$0.691 \pm 0.012$	$10^5 D/H$	2.6009	$2.609 \pm 0.048$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 \pm 1.2$
$\Omega_m$	0.3085	$0.309 \pm 0.012$	$\text{Age}/\text{Gyr}$	13.7960	$13.801 \pm 0.039$	$\chi_{\text{plikTE}}^2$	931.24	$938.4 \pm 4.1$
$\Omega_m h^2$	0.14170	$0.1417 \pm 0.0020$	$z_*$	1089.872	$1089.93 \pm 0.43$	$\chi_{\text{prior}}^2$	1.89	$7.8 \pm 3.6$
$\Omega_m h^3$	0.09603	$0.09594 \pm 0.00053$	$r_*$	144.798	$144.83 \pm 0.49$	$\chi_{\text{CMB}}^2$	6362.01	$6370.1 \pm 4.2$
$\sigma_8$	0.8024	$0.802 \pm 0.018$	$100\theta_*$	1.04115	$1.04113 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 6363.89$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.85$ ;  $R - 1 = 0.00716$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.77 plik\_dx11dr2\_HM\_v18\_TE: 931.24



## 2.14 base\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02388	$0.0240 \pm 0.0013$	$\sigma_8 \Omega_m^{0.25}$	0.5790	$0.582 \pm 0.031$	$z_{\text{drag}}$	1062.98	$1063.1 \pm 2.6$
$\Omega_c h^2$	0.1148	$0.1150^{+0.0048}_{-0.0055}$	$\sigma_8/h^{0.5}$	0.9477	$0.951 \pm 0.045$	$r_{\text{drag}}$	146.82	$146.68 \pm 0.78$
$100\theta_{\text{MC}}$	1.03993	$1.03988 \pm 0.00094$	$\langle d^2 \rangle^{1/2}$	2.387	$2.400 \pm 0.093$	$k_{\text{D}}$	0.14220	$0.1423 \pm 0.0014$
$\tau$	0.0566	$0.059^{+0.022}_{-0.019}$	$z_{\text{re}}$	7.50	$7.6^{+2.2}_{-1.6}$	$100\theta_{\text{D}}$	0.15885	$0.1588^{+0.0012}_{-0.0016}$
$\ln(10^{10} A_s)$	3.0591	$3.066^{+0.046}_{-0.041}$	$10^9 A_s$	2.131	$2.148 \pm 0.091$	$z_{\text{eq}}$	3313	$3321^{+89}_{-100}$
$n_s$	0.9732	$0.973 \pm 0.016$	$10^9 A_s e^{-2\tau}$	1.9027	$1.907 \pm 0.027$	$k_{\text{eq}}$	0.010113	$0.01014^{+0.00027}_{-0.00032}$
$y_{\text{cal}}$	0.99986	$1.0002 \pm 0.0025$	$D_{40}$	1250.6	$1257 \pm 36$	$100\theta_{\text{eq}}$	0.8330	$0.832 \pm 0.021$
$A_{100}^{\text{dustEE}}$	0.0802	$0.0804 \pm 0.0060$	$D_{220}$	6011	$6031 \pm 210$	$100\theta_{\text{s,eq}}$	0.4585	$0.458 \pm 0.010$
$A_{100 \times 143}^{\text{dustEE}}$	0.0475	$0.0475 \pm 0.0056$	$D_{810}$	2587.2	$2590 \pm 42$	$r_{\text{drag}}/D_V(0.57)$	0.07296	$0.0730 \pm 0.0019$
$A_{100 \times 217}^{\text{dustEE}}$	0.0954	$0.099 \pm 0.032$	$D_{1420}$	839.2	$840 \pm 20$	$H(0.57)$	94.45	$94.6^{+1.6}_{-1.8}$
$A_{143}^{\text{dustEE}}$	0.0988	$0.0985 \pm 0.0074$	$D_{2000}$	239.2	$239.4 \pm 7.8$	$D_A(0.57)$	1351.8	$1352 \pm 41$
$A_{143 \times 217}^{\text{dustEE}}$	0.2241	$0.224 \pm 0.046$	$n_{\text{s},0.002}$	0.9732	$0.973 \pm 0.016$	$F_{\text{AP}}(0.57)$	0.6687	$0.6691^{+0.0076}_{-0.0096}$
$A_{217}^{\text{dustEE}}$	0.636	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.24603	$0.24605 \pm 0.00054$	$f\sigma_8(0.57)$	0.4539	$0.455 \pm 0.021$
$H_0$	70.15	$70.2 \pm 3.0$	$Y_{\text{P}}^{\text{BBN}}$	0.24736	$0.24738 \pm 0.00054$	$\sigma_8(0.57)$	0.5975	$0.599 \pm 0.014$
$\Omega_{\Lambda}$	0.7170	$0.714^{+0.038}_{-0.027}$	$10^5 \text{D}/\text{H}$	2.333	$2.33^{+0.19}_{-0.24}$	$\chi_{\text{lowEB}}^2$	5430.73	$5431.8 \pm 1.3$
$\Omega_{\text{m}}$	0.2830	$0.286^{+0.027}_{-0.038}$	Age/Gyr	13.652	$13.64 \pm 0.16$	$\chi_{\text{plikEE}}^2$	750.75	$758.5 \pm 4.4$
$\Omega_{\text{m}} h^2$	0.13930	$0.1396^{+0.0037}_{-0.0044}$	$z_*$	1087.70	$1087.7^{+1.7}_{-2.0}$	$\chi_{\text{prior}}^2$	3.42	$7.7 \pm 3.4$
$\Omega_{\text{m}} h^3$	0.09772	$0.0979^{+0.0019}_{-0.0021}$	$r_*$	144.63	$144.51 \pm 0.72$	$\chi_{\text{CMB}}^2$	6181.48	$6190.3 \pm 4.5$
$\sigma_8$	0.7938	$0.796 \pm 0.024$	$100\theta_*$	1.03996	$1.03990 \pm 0.00091$			
$\sigma_8 \Omega_m^{0.5}$	0.4223	$0.425^{+0.033}_{-0.037}$	$D_A/\text{Gpc}$	13.907	$13.897 \pm 0.067$			

Best-fit  $\chi_{\text{eff}}^2 = 6184.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 6197.97$ ;  $R - 1 = 0.00671$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5430.73 plik\_dx11dr2\_HM\_v18\_EE: 750.75

## 2.15 base\_plikHM\_TT\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022143	$0.02213 \pm 0.00023$	$\Omega_m$	0.3241	$0.324^{+0.014}_{-0.015}$	$100\theta_*$	1.040903	$1.04090 \pm 0.00048$
$\Omega_c h^2$	0.12124	$0.1212 \pm 0.0023$	$\Omega_m h^2$	0.14402	$0.1440 \pm 0.0021$	$D_A/\text{Gpc}$	13.8616	$13.863 \pm 0.046$
$100\theta_{\text{MC}}$	1.040695	$1.04069 \pm 0.00049$	$\Omega_m h^3$	0.096011	$0.09598 \pm 0.00045$	$z_{\text{drag}}$	1059.513	$1059.46 \pm 0.46$
$\tau$	0.0693	$0.069 \pm 0.018$	$\sigma_8$	0.8280	$0.828 \pm 0.014$	$r_{\text{drag}}$	147.017	$147.04 \pm 0.49$
$\ln(10^{10} A_s)$	3.0767	$3.076 \pm 0.035$	$\sigma_8 \Omega_m^{0.5}$	0.4714	$0.471 \pm 0.014$	$k_D$	0.14077	$0.14073 \pm 0.00051$
$n_s$	0.9608	$0.9603 \pm 0.0064$	$\sigma_8 \Omega_m^{0.25}$	0.6247	$0.624 \pm 0.013$	$100\theta_D$	0.161002	$0.16103 \pm 0.00027$
$y_{\text{cal}}$	1.00030	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0141	$1.014 \pm 0.019$	$z_{\text{eq}}$	3426	$3426 \pm 51$
$A_{217}^{\text{CIB}}$	67.7	$64.8 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.5081	$2.509 \pm 0.046$	$k_{\text{eq}}$	0.010458	$0.01046 \pm 0.00016$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	9.24	$9.1^{+1.9}_{-1.6}$	$100\theta_{\text{eq}}$	0.8082	$0.8085 \pm 0.0095$
$A_{143}^{\text{tSZ}}$	7.15	$4.9 \pm 2.0$	$10^9 A_s$	2.169	$2.169 \pm 0.076$	$100\theta_{s,\text{eq}}$	0.44690	$0.4470 \pm 0.0049$
$A_{100}^{\text{PS}}$	255.9	$263 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8880	$1.888 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07090	$0.07092 \pm 0.00075$
$A_{143}^{\text{PS}}$	40.6	$45 \pm 8$	$D_{40}$	1245.0	$1247 \pm 16$	$H(0.57)$	92.625	$92.63 \pm 0.42$
$A_{143 \times 217}^{\text{PS}}$	33.6	$39^{+10}_{-10}$	$D_{220}$	5721.6	$5723 \pm 41$	$D_A(0.57)$	1400.2	$1400 \pm 13$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$D_{810}$	2536.2	$2535 \pm 14$	$F_{\text{AP}}(0.57)$	0.67920	$0.6792 \pm 0.0036$
$A^{\text{kSZ}}$	0.00	$< 5.13$	$D_{1420}$	813.7	$813.1 \pm 5.2$	$f\sigma_8(0.57)$	0.4845	$0.4842 \pm 0.0091$
$A_{100}^{\text{dustTT}}$	7.37	$7.4 \pm 1.9$	$D_{2000}$	229.79	$229.6 \pm 1.9$	$\sigma_8(0.57)$	0.6129	$0.613 \pm 0.011$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$n_{s,0.002}$	0.9608	$0.9603 \pm 0.0064$	$f_{2000}^{143}$	30.59	$31.1 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.78	$17.1 \pm 4.2$	$Y_{\text{P}}$	0.245289	$0.24528 \pm 0.00011$	$f_{2000}^{143 \times 217}$	33.06	$33.3 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.6 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246616	$0.24661 \pm 0.00011$	$f_{2000}^{217}$	106.60	$106.7 \pm 2.0$
$c_{100}$	0.99794	$0.99792 \pm 0.00077$	$10^5 D/H$	2.6343	$2.637 \pm 0.044$	$\chi_{\text{lowEB}}^2$	5431.55	$5432.4 \pm 2.0$
$c_{217}$	0.99601	$0.9960 \pm 0.0014$	$\text{Age}/\text{Gyr}$	13.8321	$13.833 \pm 0.039$	$\chi_{\text{plik}}^2$	763.7	$777.5 \pm 5.6$
$H_0$	66.66	$66.67 \pm 0.99$	$z_*$	1090.317	$1090.34 \pm 0.44$	$\chi_{\text{prior}}^2$	2.00	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6759	$0.676^{+0.015}_{-0.014}$	$r_*$	144.29	$144.30 \pm 0.50$	$\chi_{\text{CMB}}^2$	6195.2	$6209.9 \pm 5.5$

Best-fit  $\chi_{\text{eff}}^2 = 6197.23$ ;  $\bar{\chi}_{\text{eff}}^2 = 6217.15$ ;  $R - 1 = 0.00628$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5431.55 plik\_dx11dr2\_HM\_v18.TT: 763.67

## 2.16 base\_plikHM\_TTTEEE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022214	$0.02221 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.084$	$10^5 \text{D/H}$	2.6208	$2.622 \pm 0.030$
$\Omega_c h^2$	0.12059	$0.1205 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.053$	Age/Gyr	13.8222	$13.823 \pm 0.026$
$100\theta_{\text{MC}}$	1.040702	$1.04069 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.340 \pm 0.081$	$z_*$	1090.169	$1090.17 \pm 0.30$
$\tau$	0.0728	$0.073 \pm 0.016$	$A_{217}^{\text{dust}TE}$	1.678	$1.67 \pm 0.25$	$r_*$	144.398	$144.43 \pm 0.32$
$\ln(10^{10} A_s)$	3.0827	$3.084 \pm 0.032$	$c_{100}$	0.99823	$0.99818 \pm 0.00078$	$100\theta_*$	1.040902	$1.04089 \pm 0.00031$
$n_s$	0.96160	$0.9614 \pm 0.0049$	$c_{217}$	0.99606	$0.9961 \pm 0.0015$	$D_A/\text{Gpc}$	13.8724	$13.876 \pm 0.030$
$y_{\text{cal}}$	1.00025	$1.0005 \pm 0.0025$	$H_0$	66.95	$66.97 \pm 0.66$	$z_{\text{drag}}$	1059.628	$1059.59 \pm 0.32$
$A_{217}^{\text{CIB}}$	67.3	$64.6 \pm 6.6$	$\Omega_\Lambda$	0.6799	$0.6803 \pm 0.0093$	$r_{\text{drag}}$	147.108	$147.14 \pm 0.32$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$\Omega_m$	0.3201	$0.3197 \pm 0.0093$	$k_D$	0.140728	$0.14068 \pm 0.00033$
$A_{143}^{\text{tSZ}}$	7.13	$5.2 \pm 1.9$	$\Omega_m h^2$	0.14345	$0.1433 \pm 0.0014$	$100\theta_D$	0.160924	$0.16094 \pm 0.00019$
$A_{100}^{\text{PS}}$	259.0	$264 \pm 28$	$\Omega_m h^3$	0.096035	$0.09600 \pm 0.00030$	$z_{\text{eq}}$	3412.6	$3410 \pm 33$
$A_{143}^{\text{PS}}$	40.4	$44 \pm 8$	$\sigma_8$	0.8283	$0.828 \pm 0.013$	$k_{\text{eq}}$	0.010416	$0.01041 \pm 0.00010$
$A_{143 \times 217}^{\text{PS}}$	34.6	$40_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.5}$	0.4686	$0.4683 \pm 0.0099$	$100\theta_{\text{eq}}$	0.8108	$0.8113 \pm 0.0063$
$A_{217}^{\text{PS}}$	97.9	$97 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.44821	$0.4485 \pm 0.0032$
$A^{\text{kSZ}}$	0.00	$< 4.52$	$\sigma_8/h^{0.5}$	1.0123	$1.012 \pm 0.016$	$r_{\text{drag}}/D_V(0.57)$	0.071104	$0.07113 \pm 0.00050$
$A_{100}^{\text{dust}TT}$	7.39	$7.3 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5071	$2.508 \pm 0.039$	$H(0.57)$	92.741	$92.75 \pm 0.28$
$A_{143}^{\text{dust}TT}$	8.94	$8.9 \pm 1.8$	$z_{\text{re}}$	9.53	$9.5_{-1.4}^{+1.6}$	$D_A(0.57)$	1396.4	$1396.1 \pm 8.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.58	$17.1 \pm 4.1$	$10^9 A_s$	2.182	$2.185 \pm 0.070$	$F_{\text{AP}}(0.57)$	0.67819	$0.6781 \pm 0.0023$
$A_{217}^{\text{dust}TT}$	82.0	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8862	$1.886 \pm 0.012$	$f\sigma_8(0.57)$	0.4837	$0.4836 \pm 0.0078$
$A_{100}^{\text{dust}EE}$	0.0807	$0.0808 \pm 0.0057$	$D_{40}$	1245.7	$1248 \pm 14$	$\sigma_8(0.57)$	0.6141	$0.6142 \pm 0.0097$
$A_{100 \times 143}^{\text{dust}EE}$	0.04828	$0.0484 \pm 0.0050$	$D_{220}$	5733.9	$5738 \pm 39$	$f_{2000}^{143}$	30.03	$30.4 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.0996 \pm 0.033$	$D_{810}$	2536.6	$2537 \pm 14$	$f_{2000}^{143 \times 217}$	32.71	$32.8 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.0995	$0.0996 \pm 0.0069$	$D_{1420}$	814.07	$814.0 \pm 4.8$	$f_{2000}^{217}$	106.26	$106.4 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2240	$0.224 \pm 0.047$	$D_{2000}$	230.01	$229.9 \pm 1.6$	$\chi_{\text{lowEB}}^2$	5431.90	$5432.6 \pm 2.0$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.96160	$0.9614 \pm 0.0049$	$\chi_{\text{plik}}^2$	2432.3	$2451.1 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1423	$0.141 \pm 0.038$	$Y_{\text{P}}$	0.245324	$0.245318 \pm 0.000074$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1322	$0.132 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.246650	$0.246644 \pm 0.000074$	$\chi_{\text{CMB}}^2$	7864.2	$7883.7 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 7870.83$ ;  $\bar{\chi}_{\text{eff}}^2 = 7902.90$ ;  $R - 1 = 0.00941$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5431.90 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.28

## 2.17 base\_plikHM\_TT\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022215	$0.02220 \pm 0.00023$	$\Omega_m$	0.3202	$0.321 \pm 0.014$	$100\theta_*$	1.040984	$1.04098 \pm 0.00047$
$\Omega_c h^2$	0.12066	$0.1208 \pm 0.0022$	$\Omega_m h^2$	0.14352	$0.1436 \pm 0.0021$	$D_A/\text{Gpc}$	13.8696	$13.869 \pm 0.046$
$100\theta_{\text{MC}}$	1.040786	$1.04078 \pm 0.00048$	$\Omega_m h^3$	0.096086	$0.09606 \pm 0.00045$	$z_{\text{drag}}$	1059.628	$1059.59 \pm 0.47$
$\tau$	0.0851	$0.083 \pm 0.018$	$\sigma_8$	0.8389	$0.838 \pm 0.014$	$r_{\text{drag}}$	147.091	$147.09 \pm 0.50$
$\ln(10^{10} A_s)$	3.1066	$3.104 \pm 0.035$	$\sigma_8 \Omega_m^{0.5}$	0.4747	$0.475 \pm 0.014$	$k_D$	0.14075	$0.14074 \pm 0.00053$
$n_s$	0.9626	$0.9620 \pm 0.0063$	$\sigma_8 \Omega_m^{0.25}$	0.6310	$0.630 \pm 0.014$	$100\theta_D$	0.160934	$0.16096 \pm 0.00027$
$A_{217}^{\text{CIB}}$	67.0	$64.0 \pm 6.6$	$\sigma_8/h^{0.5}$	1.0252	$1.024 \pm 0.020$	$z_{\text{eq}}$	3414	$3416 \pm 51$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\langle d^2 \rangle^{1/2}$	2.5356	$2.534 \pm 0.048$	$k_{\text{eq}}$	0.010421	$0.01043 \pm 0.00015$
$A_{143}^{\text{tSZ}}$	7.16	$5.0 \pm 1.9$	$z_{\text{re}}$	10.65	$10.4_{-1.5}^{+1.8}$	$100\theta_{\text{eq}}$	0.8106	$0.8104 \pm 0.0094$
$A_{100}^{\text{PS}}$	255.0	$260 \pm 28$	$10^9 A_s$	2.235	$2.229 \pm 0.078$	$100\theta_{s,\text{eq}}$	0.44810	$0.4480 \pm 0.0049$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$10^9 A_s e^{-2\tau}$	1.8850	$1.885 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07110	$0.07108 \pm 0.00074$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39 \pm 10$	$D_{40}$	1247.6	$1249 \pm 16$	$H(0.57)$	92.755	$92.74 \pm 0.41$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$D_{220}$	5723.6	$5725 \pm 41$	$D_A(0.57)$	1396.2	$1397 \pm 13$
$A^{\text{kSZ}}$	0.00	$< 4.89$	$D_{810}$	2534.4	$2534 \pm 14$	$F_{\text{AP}}(0.57)$	0.67822	$0.6784 \pm 0.0035$
$A_{100}^{\text{dustTT}}$	7.25	$7.4 \pm 1.9$	$D_{1420}$	813.6	$813.2 \pm 5.2$	$f\sigma_8(0.57)$	0.4899	$0.4894 \pm 0.0096$
$A_{143}^{\text{dustTT}}$	8.91	$9.0 \pm 1.8$	$D_{2000}$	230.20	$230.0 \pm 1.9$	$\sigma_8(0.57)$	0.6219	$0.621 \pm 0.011$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.1 \pm 4.1$	$n_{s,0.002}$	0.9626	$0.9620 \pm 0.0063$	$f_{2000}^{143}$	29.82	$30.4 \pm 2.9$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.4$	$Y_P$	0.245324	$0.24531 \pm 0.00010$	$f_{2000}^{143 \times 217}$	32.38	$32.7 \pm 2.1$
$c_{100}$	0.99794	$0.99792 \pm 0.00077$	$Y_P^{\text{BBN}}$	0.246650	$0.24664 \pm 0.00011$	$f_{2000}^{217}$	106.06	$106.3 \pm 2.0$
$c_{217}$	0.99596	$0.9959 \pm 0.0014$	$10^5 \text{D}/\text{H}$	2.6207	$2.625 \pm 0.044$	$\chi_{\text{plik}}^2$	762.4	$776.4 \pm 5.5$
$y_{\text{cal}}$	1.00021	$1.0002 \pm 0.0025$	$\text{Age}/\text{Gyr}$	13.8199	$13.822 \pm 0.038$	$\chi_{\text{prior}}^2$	2.54	$8.5 \pm 3.9$
$H_0$	66.95	$66.91 \pm 0.98$	$z_*$	1090.173	$1090.21 \pm 0.43$			
$\Omega_\Lambda$	0.6798	$0.679_{-0.014}^{+0.015}$	$r_*$	144.380	$144.37 \pm 0.50$			

Best-fit  $\chi_{\text{eff}}^2 = 764.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 784.98$ ;  $R - 1 = 0.00877$

$\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 762.36

## 2.18 base\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022256	$0.02224 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.053$	$10^5 \text{D/H}$	2.6129	$2.616 \pm 0.030$
$\Omega_c h^2$	0.12009	$0.1202 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.081$	Age/Gyr	13.8150	$13.817 \pm 0.026$
$100\theta_{\text{MC}}$	1.040726	$1.04073 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.672	$1.67 \pm 0.26$	$z_*$	1090.071	$1090.11 \pm 0.30$
$\tau$	0.0883	$0.086 \pm 0.016$	$c_{100}$	0.99822	$0.99821 \pm 0.00077$	$r_*$	144.496	$144.48 \pm 0.33$
$\ln(10^{10} A_s)$	3.1123	$3.108 \pm 0.031$	$c_{217}$	0.99593	$0.9960 \pm 0.0014$	$100\theta_*$	1.040927	$1.04093 \pm 0.00031$
$n_s$	0.96328	$0.9625 \pm 0.0049$	$y_{\text{cal}}$	1.00013	$1.0003 \pm 0.0025$	$D_A/\text{Gpc}$	13.8815	$13.880 \pm 0.030$
$A_{217}^{\text{CIB}}$	65.7	$64.0 \pm 6.6$	$H_0$	67.17	$67.12 \pm 0.66$	$z_{\text{drag}}$	1059.666	$1059.65 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.18	—	$\Omega_\Lambda$	0.6830	$0.6822 \pm 0.0092$	$r_{\text{drag}}$	147.197	$147.18 \pm 0.32$
$A_{143}^{\text{tSZ}}$	7.06	$5.3 \pm 1.9$	$\Omega_m$	0.3170	$0.3178 \pm 0.0092$	$k_D$	0.140668	$0.14067 \pm 0.00034$
$A_{100}^{\text{PS}}$	255.8	$262 \pm 28$	$\Omega_m h^2$	0.14299	$0.1431 \pm 0.0014$	$100\theta_D$	0.160886	$0.16091 \pm 0.00018$
$A_{143}^{\text{PS}}$	41.4	$44 \pm 8$	$\Omega_m h^3$	0.096039	$0.09603 \pm 0.00030$	$z_{\text{eq}}$	3401.6	$3404 \pm 33$
$A_{143 \times 217}^{\text{PS}}$	38.0	$40_{-10}^{+10}$	$\sigma_8$	0.8393	$0.838 \pm 0.013$	$k_{\text{eq}}$	0.010382	$0.01039 \pm 0.00010$
$A_{217}^{\text{PS}}$	99.8	$98 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4725	$0.4722 \pm 0.0099$	$100\theta_{\text{eq}}$	0.8129	$0.8125 \pm 0.0063$
$A^{\text{kSZ}}$	0.00	$< 4.30$	$\sigma_8 \Omega_m^{0.25}$	0.6298	$0.629 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.44928	$0.4491 \pm 0.0032$
$A_{100}^{\text{dust}TT}$	7.31	$7.3 \pm 1.9$	$\sigma_8/h^{0.5}$	1.0241	$1.023 \pm 0.016$	$r_{\text{drag}}/D_V(0.57)$	0.071268	$0.07124 \pm 0.00049$
$A_{143}^{\text{dust}TT}$	8.95	$8.9 \pm 1.8$	$\langle d^2 \rangle^{1/2}$	2.5355	$2.533 \pm 0.039$	$H(0.57)$	92.828	$92.81 \pm 0.28$
$A_{143 \times 217}^{\text{dust}TT}$	17.70	$17.0 \pm 4.1$	$z_{\text{re}}$	10.91	$10.6_{-1.3}^{+1.6}$	$D_A(0.57)$	1393.5	$1394.2 \pm 8.8$
$A_{217}^{\text{dust}TT}$	82.2	$81.6 \pm 7.4$	$10^9 A_s$	2.247	$2.238 \pm 0.070$	$F_{\text{AP}}(0.57)$	0.67741	$0.6776 \pm 0.0023$
$A_{100}^{\text{dust}EE}$	0.0812	$0.0808 \pm 0.0057$	$10^9 A_s e^{-2\tau}$	1.8836	$1.884 \pm 0.012$	$f\sigma_8(0.57)$	0.4894	$0.4886 \pm 0.0078$
$A_{100 \times 143}^{\text{dust}EE}$	0.04843	$0.0483 \pm 0.0049$	$D_{40}$	1248.5	$1250 \pm 14$	$\sigma_8(0.57)$	0.6230	$0.6216 \pm 0.0097$
$A_{100 \times 217}^{\text{dust}EE}$	0.0987	$0.0998 \pm 0.032$	$D_{220}$	5733.5	$5736 \pm 40$	$f_{2000}^{143}$	29.25	$29.9 \pm 2.7$
$A_{143}^{\text{dust}EE}$	0.0997	$0.0995 \pm 0.0069$	$D_{810}$	2534.7	$2535 \pm 14$	$f_{2000}^{143 \times 217}$	32.16	$32.4 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2228	$0.223 \pm 0.047$	$D_{1420}$	813.84	$813.6 \pm 4.9$	$f_{2000}^{217}$	105.70	$106.0 \pm 1.9$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$D_{2000}$	230.33	$230.2 \pm 1.7$	$\chi_{\text{plik}}^2$	2430.6	$2449.8 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1403	$0.141 \pm 0.038$	$n_{\text{s},0.002}$	0.96328	$0.9625 \pm 0.0049$	$\chi_{\text{prior}}^2$	7.6	$20 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1313	$0.131 \pm 0.029$	$Y_{\text{P}}$	0.245342	$0.245333 \pm 0.000072$			
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.304 \pm 0.085$	$Y_{\text{P}}^{\text{BBN}}$	0.246669	$0.246659 \pm 0.000072$			

Best-fit  $\chi_{\text{eff}}^2 = 2438.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 2470.25$ ;  $R - 1 = 0.01136$

$\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.59

## 2.19 base\_plikHM\_TT\_lowl

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022491	$0.02240 \pm 0.00027$	$\Omega_m$	0.3002	$0.305^{+0.015}_{-0.017}$	$100\theta_*$	1.04136	$1.04127 \pm 0.00051$
$\Omega_c h^2$	0.11747	$0.1181 \pm 0.0026$	$\Omega_m h^2$	0.14060	$0.1411 \pm 0.0024$	$D_A/\text{Gpc}$	13.924	$13.917 \pm 0.050$
$100\theta_{\text{MC}}$	1.04119	$1.04109 \pm 0.00053$	$\Omega_m h^3$	0.096230	$0.09612 \pm 0.00046$	$z_{\text{drag}}$	1060.05	$1059.87 \pm 0.52$
$\tau$	0.1250	$0.112^{+0.036}_{-0.032}$	$\sigma_8$	0.8610	$0.852 \pm 0.023$	$r_{\text{drag}}$	147.63	$147.57 \pm 0.53$
$\ln(10^{10} A_s)$	3.179	$3.154^{+0.068}_{-0.060}$	$\sigma_8 \Omega_m^{0.5}$	0.4718	$0.470 \pm 0.014$	$k_D$	0.14039	$0.14038 \pm 0.00053$
$n_s$	0.9742	$0.9711 \pm 0.0079$	$\sigma_8 \Omega_m^{0.25}$	0.6373	$0.633 \pm 0.016$	$100\theta_D$	0.160715	$0.16081 \pm 0.00029$
$y_{\text{cal}}$	1.00027	$1.0002 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0408	$1.032 \pm 0.025$	$z_{\text{eq}}$	3345	$3357 \pm 58$
$A_{217}^{\text{CIB}}$	61.1	$62.3 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.567	$2.550^{+0.064}_{-0.057}$	$k_{\text{eq}}$	0.010208	$0.01025 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.56	—	$z_{\text{re}}$	13.76	$12.6^{+3.1}_{-2.2}$	$100\theta_{\text{eq}}$	0.8243	$0.822 \pm 0.011$
$A_{143}^{\text{tSZ}}$	6.84	$5.4^{+2.1}_{-1.9}$	$10^9 A_s$	2.402	$2.35 \pm 0.15$	$100\theta_{s,\text{eq}}$	0.4550	$0.4538 \pm 0.0058$
$A_{100}^{\text{PS}}$	242.9	$252 \pm 30$	$10^9 A_s e^{-2\tau}$	1.8705	$1.872 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07221	$0.07201 \pm 0.00091$
$A_{143}^{\text{PS}}$	43.0	$41 \pm 8$	$D_{40}$	1242.3	$1244 \pm 16$	$H(0.57)$	93.39	$93.25 \pm 0.54$
$A_{143 \times 217}^{\text{PS}}$	46.1	$39 \pm 10$	$D_{220}$	5722.1	$5721 \pm 41$	$D_A(0.57)$	1376.4	$1381 \pm 16$
$A_{217}^{\text{PS}}$	104.1	$98 \pm 10$	$D_{810}$	2531.6	$2530 \pm 14$	$F_{\text{AP}}(0.57)$	0.67314	$0.6742 \pm 0.0041$
$A^{\text{kSZ}}$	0.00	$< 3.84$	$D_{1420}$	816.5	$814.9 \pm 5.0$	$f\sigma_8(0.57)$	0.4975	$0.493 \pm 0.012$
$A_{100}^{\text{dustTT}}$	7.31	$7.4 \pm 1.9$	$D_{2000}$	232.38	$231.4 \pm 2.1$	$\sigma_8(0.57)$	0.6435	$0.636 \pm 0.019$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.9$	$n_{s,0.002}$	0.9742	$0.9711 \pm 0.0079$	$f_{2000}^{143}$	26.65	$28 \pm 3$
$A_{143 \times 217}^{\text{dustTT}}$	17.99	$16.9 \pm 4.2$	$Y_P$	0.245446	$0.24540 \pm 0.00012$	$f_{2000}^{143 \times 217}$	30.07	$30.9 \pm 2.4$
$A_{217}^{\text{dustTT}}$	82.9	$81.9 \pm 7.4$	$Y_P^{\text{BBN}}$	0.246773	$0.24673 \pm 0.00012$	$f_{2000}^{217}$	103.68	$104.7 \pm 2.3$
$c_{100}$	0.99796	$0.99788 \pm 0.00078$	$10^5 D/H$	2.569	$2.586 \pm 0.051$	$\chi_{\text{lowl}}^2$	15.39	$15.6 \pm 1.8$
$c_{217}$	0.99555	$0.9958 \pm 0.0015$	$\text{Age/Gyr}$	13.7664	$13.781 \pm 0.048$	$\chi_{\text{plik}}^2$	761.1	$775.6 \pm 5.7$
$H_0$	68.44	$68.1 \pm 1.2$	$z_*$	1089.55	$1089.72 \pm 0.52$	$\chi_{\text{prior}}^2$	1.58	$7.2 \pm 3.5$
$\Omega_\Lambda$	0.6998	$0.695^{+0.017}_{-0.015}$	$r_*$	145.00	$144.91 \pm 0.55$	$\chi_{\text{CMB}}^2$	776.5	$791.1 \pm 5.5$

Best-fit  $\chi_{\text{eff}}^2 = 778.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 798.39$ ;  $R - 1 = 0.00655$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2\_v1.1\_l2\_29\_B: 15.39 plik\_dx11dr2\_HM\_v18\_TT: 761.09

## 2.20 base\_plikHM\_TT\_lowl\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022416	$0.02237 \pm 0.00021$	$\Omega_m h^3$	0.096169	$0.09611 \pm 0.00046$	$k_D$	0.140484	$0.14044 \pm 0.00044$
$\Omega_c h^2$	0.11831	$0.1185 \pm 0.0013$	$\sigma_8$	0.8571	$0.851 \pm 0.022$	$100\theta_D$	0.160765	$0.16083 \pm 0.00026$
$100\theta_{MC}$	1.041028	$1.04103 \pm 0.00043$	$\sigma_8 \Omega_m^{0.5}$	0.4738	$0.471 \pm 0.012$	$z_{eq}$	3362.9	$3367 \pm 30$
$\tau$	0.1164	$0.108^{+0.030}_{-0.026}$	$\sigma_8 \Omega_m^{0.25}$	0.6372	$0.633 \pm 0.016$	$k_{eq}$	0.010264	$0.010275 \pm 0.000093$
$\ln(10^{10} A_s)$	3.164	$3.147^{+0.058}_{-0.051}$	$\sigma_8/h^{0.5}$	1.0392	$1.032 \pm 0.026$	$100\theta_{eq}$	0.8206	$0.8198 \pm 0.0058$
$n_s$	0.9720	$0.9698 \pm 0.0050$	$\langle d^2 \rangle^{1/2}$	2.562	$2.549^{+0.065}_{-0.058}$	$100\theta_{s,eq}$	0.45316	$0.4528 \pm 0.0030$
$y_{cal}$	1.00039	$1.0003 \pm 0.0025$	$z_{re}$	13.14	$12.4^{+2.6}_{-1.9}$	$r_{drag}/D_V(0.57)$	0.071903	$0.07184 \pm 0.00045$
$A_{217}^{CIB}$	61.7	$62.5 \pm 6.7$	$10^9 A_s$	2.366	$2.33 \pm 0.12$	$H(0.57)$	93.203	$93.15 \pm 0.29$
$\xi^{tSZ \times CIB}$	0.55	—	$10^9 A_s e^{-2\tau}$	1.8744	$1.874 \pm 0.012$	$D_A(0.57)$	1381.9	$1383.5 \pm 8.3$
$A_{143}^{tSZ}$	6.78	$5.4^{+2.1}_{-1.9}$	$D_{40}$	1241.9	$1244 \pm 16$	$F_{AP}(0.57)$	0.67451	$0.6749 \pm 0.0020$
$A_{100}^{PS}$	244.9	$253 \pm 28$	$D_{220}$	5717.9	$5720 \pm 41$	$f\sigma_8(0.57)$	0.4967	$0.493 \pm 0.012$
$A_{143}^{PS}$	44.0	$41 \pm 8$	$D_{810}$	2532.9	$2531 \pm 14$	$\sigma_8(0.57)$	0.6392	$0.634 \pm 0.017$
$A_{143 \times 217}^{PS}$	46.5	$39 \pm 10$	$D_{1420}$	816.28	$814.7 \pm 4.9$	$f_{2000}^{143}$	27.19	$28.3 \pm 3.1$
$A_{217}^{PS}$	104.1	$98 \pm 10$	$D_{2000}$	232.06	$231.3 \pm 1.9$	$f_{2000}^{143 \times 217}$	30.51	$31.0 \pm 2.2$
$A^{kSZ}$	0.00	$< 3.91$	$n_{s,0.002}$	0.9720	$0.9698 \pm 0.0050$	$f_{2000}^{217}$	104.11	$104.9 \pm 2.1$
$A_{100}^{dustTT}$	7.32	$7.4 \pm 1.9$	$Y_P$	0.245413	$0.245390 \pm 0.000094$	$\chi_{lowl}^2$	15.25	$15.5 \pm 1.7$
$A_{143}^{dustTT}$	9.03	$8.9 \pm 1.8$	$Y_P^{BBN}$	0.246739	$0.246716 \pm 0.000094$	$\chi_{plik}^2$	761.4	$774.9 \pm 5.6$
$A_{143 \times 217}^{dustTT}$	17.94	$16.9 \pm 4.1$	$10^5 D/H$	2.5828	$2.592 \pm 0.039$	$\chi_{6DF}^2$	0.0010	$0.050 \pm 0.070$
$A_{217}^{dustTT}$	82.7	$81.8 \pm 7.3$	Age/Gyr	13.7823	$13.788 \pm 0.030$	$\chi_{MGS}^2$	1.61	$1.58 \pm 0.61$
$c_{100}$	0.99798	$0.99789 \pm 0.00078$	$z_*$	1089.718	$1089.80 \pm 0.32$	$\chi_{DR11CMass}^2$	2.441	$2.91 \pm 0.73$
$c_{217}$	0.99560	$0.9958 \pm 0.0015$	$r_*$	144.834	$144.82 \pm 0.32$	$\chi_{DR11LOWZ}^2$	0.325	$0.55 \pm 0.54$
$H_0$	68.02	$67.91 \pm 0.61$	$100\theta_*$	1.041213	$1.04122 \pm 0.00042$	$\chi_{prior}^2$	1.52	$7.2 \pm 3.5$
$\Omega_\Lambda$	0.6945	$0.6930 \pm 0.0080$	$D_A/\text{Gpc}$	13.9101	$13.909 \pm 0.032$	$\chi_{BAO}^2$	4.38	$5.1 \pm 1.1$
$\Omega_m$	0.3055	$0.3070 \pm 0.0080$	$z_{drag}$	1059.933	$1059.82 \pm 0.46$	$\chi_{CMB}^2$	776.7	$790.4 \pm 5.4$
$\Omega_m h^2$	0.14137	$0.1415 \pm 0.0013$	$r_{drag}$	147.487	$147.49 \pm 0.35$			

Best-fit  $\chi_{eff}^2 = 782.58$ ;  $\bar{\chi}_{eff}^2 = 802.73$ ;  $R - 1 = 0.00934$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.33 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 15.25 plik\_dx11dr2\_HM\_v18\_TT: 761.44

## 2.21 base\_plikHM\_TT\_lowl\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022444	$0.02239 \pm 0.00021$	$\sigma_8$	0.8573	$0.852 \pm 0.022$	$z_{\text{eq}}$	3361.6	$3361 \pm 29$
$\Omega_c h^2$	0.11823	$0.1182 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4732	$0.471 \pm 0.012$	$k_{\text{eq}}$	0.010260	$0.010258 \pm 0.000090$
$100\theta_{\text{MC}}$	1.041128	$1.04107 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	0.6369	$0.633 \pm 0.016$	$100\theta_{\text{eq}}$	0.8210	$0.8210 \pm 0.0056$
$\tau$	0.1172	$0.111^{+0.029}_{-0.026}$	$\sigma_8/h^{0.5}$	1.0388	$1.033 \pm 0.026$	$100\theta_{\text{s,eq}}$	0.45334	$0.4534 \pm 0.0029$
$\ln(10^{10} A_s)$	3.165	$3.152^{+0.057}_{-0.050}$	$\langle d^2 \rangle^{1/2}$	2.564	$2.550^{+0.065}_{-0.058}$	$r_{\text{drag}}/D_V(0.57)$	0.071956	$0.07193^{+0.00042}_{-0.00047}$
$n_s$	0.97161	$0.9706 \pm 0.0049$	$z_{\text{re}}$	13.19	$12.6^{+2.5}_{-1.8}$	$H(0.57)$	93.255	$93.20 \pm 0.29$
$y_{\text{cal}}$	1.00026	$1.0003 \pm 0.0024$	$10^9 A_s$	2.369	$2.34 \pm 0.12$	$D_A(0.57)$	1380.7	$1381.7 \pm 8.0$
$A_{217}^{\text{CIB}}$	62.9	$62.3 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8740	$1.873 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67428	$0.6744 \pm 0.0020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$D_{40}$	1243.7	$1243 \pm 16$	$f\sigma_8(0.57)$	0.4966	$0.493 \pm 0.012$
$A_{143}^{\text{tSZ}}$	6.89	$5.4 \pm 1.9$	$D_{220}$	5723.1	$5721 \pm 41$	$\sigma_8(0.57)$	0.6395	$0.635 \pm 0.017$
$A_{100}^{\text{PS}}$	245.7	$252 \pm 28$	$D_{810}$	2532.4	$2531 \pm 14$	$f_{2000}^{143}$	27.17	$28.1 \pm 3.1$
$A_{143}^{\text{PS}}$	40.7	$41 \pm 8$	$D_{1420}$	816.01	$814.9 \pm 4.8$	$f_{2000}^{143 \times 217}$	30.39	$30.9 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	41.0	$38 \pm 10$	$D_{2000}$	232.00	$231.4 \pm 1.9$	$f_{2000}^{217}$	104.08	$104.7 \pm 2.1$
$A_{217}^{\text{PS}}$	101.7	$98 \pm 10$	$n_{\text{s},0.002}$	0.97161	$0.9706 \pm 0.0049$	$\chi_{\text{lowl}}^2$	15.46	$15.5 \pm 1.7$
$A^{\text{kSZ}}$	0.02	$< 3.83$	$Y_{\text{P}}$	0.245425	$0.245402 \pm 0.000092$	$\chi_{\text{plik}}^2$	761.0	$774.8 \pm 5.6$
$A_{100}^{\text{dustTT}}$	7.32	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246752	$0.246728 \pm 0.000093$	$\chi_{\text{H070p6}}^2$	0.565	$0.62 \pm 0.27$
$A_{143}^{\text{dustTT}}$	8.96	$8.9 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.5775	$2.587 \pm 0.039$	$\chi_{\text{JLA}}^2$	706.587	$706.65 \pm 0.16$
$A_{143 \times 217}^{\text{dustTT}}$	17.40	$16.9 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.7765	$13.783 \pm 0.030$	$\chi_{6\text{DF}}^2$	0.0001	$0.043 \pm 0.061$
$A_{217}^{\text{dustTT}}$	81.8	$81.9 \pm 7.3$	$z_*$	1089.673	$1089.74 \pm 0.31$	$\chi_{\text{MGS}}^2$	1.68	$1.71 \pm 0.61$
$c_{100}$	0.99792	$0.99789 \pm 0.00079$	$r_*$	144.834	$144.87 \pm 0.32$	$\chi_{\text{DR11CMass}}^2$	2.475	$2.92 \pm 0.73$
$c_{217}$	0.99560	$0.9958 \pm 0.0015$	$100\theta_*$	1.041299	$1.04125 \pm 0.00042$	$\chi_{\text{DR11LOWZ}}^2$	0.277	$0.44 \pm 0.45$
$H_0$	68.11	$68.04 \pm 0.59$	$D_A/\text{Gpc}$	13.9090	$13.913 \pm 0.031$	$\chi_{\text{prior}}^2$	1.75	$7.2 \pm 3.5$
$\Omega_\Lambda$	0.6954	$0.6947 \pm 0.0077$	$z_{\text{drag}}$	1059.971	$1059.86 \pm 0.45$	$\chi_{\text{BAO}}^2$	4.43	$5.1 \pm 1.1$
$\Omega_m$	0.3046	$0.3053 \pm 0.0077$	$r_{\text{drag}}$	147.480	$147.53 \pm 0.34$	$\chi_{\text{CMB}}^2$	776.5	$790.4 \pm 5.4$
$\Omega_m h^2$	0.14132	$0.1413 \pm 0.0012$	$k_{\text{D}}$	0.140513	$0.14042 \pm 0.00044$			
$\Omega_m h^3$	0.096247	$0.09613 \pm 0.00046$	$100\theta_{\text{D}}$	0.160744	$0.16081 \pm 0.00026$			

Best-fit  $\chi_{\text{eff}}^2 = 1489.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 1509.93$ ;  $R - 1 = 0.00850$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.48 DR11LOWZ: 0.28 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 15.46 plik\_dx11dr2\_HM\_v18\_TT: 761.02 Hubble - H070p6: 0.56 SN - JLA December\_2013: 706.59



## 2.22 base\_plikHM\_TT\_lowl\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02241 \pm 0.00027$	$\Omega_m$	$0.304^{+0.015}_{-0.017}$	$100\theta_*$	$1.04129 \pm 0.00050$
$\Omega_c h^2$	$0.1180 \pm 0.0025$	$\Omega_m h^2$	$0.1410 \pm 0.0024$	$D_A/\text{Gpc}$	$13.918 \pm 0.049$
$100\theta_{\text{MC}}$	$1.04111 \pm 0.00052$	$\Omega_m h^3$	$0.09613 \pm 0.00046$	$z_{\text{drag}}$	$1059.88 \pm 0.51$
$\tau$	$0.114 \pm 0.031$	$\sigma_8$	$0.853 \pm 0.021$	$r_{\text{drag}}$	$147.58 \pm 0.52$
$\ln(10^{10} A_s)$	$3.158 \pm 0.058$	$\sigma_8 \Omega_m^{0.5}$	$0.470 \pm 0.013$	$k_D$	$0.14038 \pm 0.00052$
$n_s$	$0.9714 \pm 0.0078$	$\sigma_8 \Omega_m^{0.25}$	$0.633 \pm 0.015$	$100\theta_D$	$0.16080 \pm 0.00028$
$y_{\text{cal}}$	$1.0002 \pm 0.0025$	$\sigma_8/h^{0.5}$	$1.034 \pm 0.024$	$z_{\text{eq}}$	$3355 \pm 56$
$A_{217}^{\text{CIB}}$	$62.3 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	$2.553 \pm 0.057$	$k_{\text{eq}}$	$0.01024 \pm 0.00017$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$12.8^{+2.8}_{-2.2}$	$100\theta_{\text{eq}}$	$0.822 \pm 0.011$
$A_{143}^{\text{tSZ}}$	$5.5^{+2.1}_{-1.8}$	$10^9 A_s$	$2.36 \pm 0.14$	$100\theta_{\text{s,eq}}$	$0.4540 \pm 0.0056$
$A_{100}^{\text{PS}}$	$251 \pm 30$	$10^9 A_s e^{-2\tau}$	$1.872 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	$0.07204 \pm 0.00089$
$A_{143}^{\text{PS}}$	$41 \pm 8$	$D_{40}$	$1244 \pm 16$	$H(0.57)$	$93.27 \pm 0.52$
$A_{143 \times 217}^{\text{PS}}$	$38 \pm 10$	$D_{220}$	$5721 \pm 41$	$D_A(0.57)$	$1380 \pm 16$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$D_{810}$	$2530 \pm 14$	$F_{\text{AP}}(0.57)$	$0.6741 \pm 0.0040$
$A^{\text{kSZ}}$	$< 3.76$	$D_{1420}$	$815.0 \pm 5.0$	$f\sigma_8(0.57)$	$0.494 \pm 0.012$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$D_{2000}$	$231.5 \pm 2.0$	$\sigma_8(0.57)$	$0.637 \pm 0.018$
$A_{143}^{\text{dustTT}}$	$8.9 \pm 1.8$	$n_{\text{s},0.002}$	$0.9714 \pm 0.0078$	$f_{2000}^{143}$	$28 \pm 3$
$A_{143 \times 217}^{\text{dustTT}}$	$16.9 \pm 4.1$	$Y_{\text{P}}$	$0.24541 \pm 0.00012$	$f_{2000}^{143 \times 217}$	$30.8 \pm 2.4$
$A_{217}^{\text{dustTT}}$	$81.9 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	$0.24674 \pm 0.00012$	$f_{2000}^{217}$	$104.6 \pm 2.2$
$c_{100}$	$0.99788 \pm 0.00078$	$10^5 \text{D}/\text{H}$	$2.584 \pm 0.050$	$\chi_{\text{lowl}}^2$	$15.6 \pm 1.7$
$c_{217}$	$0.9958 \pm 0.0015$	$\text{Age}/\text{Gyr}$	$13.779 \pm 0.046$	$\chi_{\text{plik}}^2$	$775.3 \pm 5.5$
$H_0$	$68.2 \pm 1.2$	$z_*$	$1089.70 \pm 0.51$	$\chi_{\text{prior}}^2$	$7.2 \pm 3.5$
$\Omega_\Lambda$	$0.696^{+0.017}_{-0.015}$	$r_*$	$144.92 \pm 0.54$	$\chi_{\text{CMB}}^2$	$790.9 \pm 5.4$

$\bar{\chi}_{\text{eff}}^2 = 798.12$ ;  $R - 1 = 0.00960$

## 2.23 base\_plikHM\_TT\_lowl\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02237 \pm 0.00021$	$\Omega_m h^3$	$0.09612 \pm 0.00046$	$k_D$	$0.14044 \pm 0.00044$
$\Omega_c h^2$	$0.1185 \pm 0.0013$	$\sigma_8$	$0.851 \pm 0.021$	$100\theta_D$	$0.16083 \pm 0.00026$
$100\theta_{MC}$	$1.04103 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	$0.471 \pm 0.012$	$z_{eq}$	$3366 \pm 30$
$\tau$	$0.109 \pm 0.026$	$\sigma_8 \Omega_m^{0.25}$	$0.634 \pm 0.015$	$k_{eq}$	$0.010275 \pm 0.000093$
$\ln(10^{10} A_s)$	$3.149 \pm 0.051$	$\sigma_8/h^{0.5}$	$1.033 \pm 0.025$	$100\theta_{eq}$	$0.8199 \pm 0.0057$
$n_s$	$0.9699 \pm 0.0050$	$\langle d^2 \rangle^{1/2}$	$2.551 \pm 0.059$	$100\theta_{s,eq}$	$0.4528 \pm 0.0029$
$y_{cal}$	$1.0002 \pm 0.0024$	$z_{re}$	$12.5^{+2.4}_{-1.9}$	$r_{drag}/D_V(0.57)$	$0.07184 \pm 0.00045$
$A_{217}^{CIB}$	$62.4 \pm 6.7$	$10^9 A_s$	$2.33 \pm 0.12$	$H(0.57)$	$93.15 \pm 0.29$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.874 \pm 0.012$	$D_A(0.57)$	$1383.4 \pm 8.2$
$A_{143}^{tSZ}$	$5.4 \pm 1.9$	$D_{40}$	$1244 \pm 16$	$F_{AP}(0.57)$	$0.6748 \pm 0.0020$
$A_{100}^{PS}$	$253 \pm 28$	$D_{220}$	$5720 \pm 41$	$f\sigma_8(0.57)$	$0.494 \pm 0.012$
$A_{143}^{PS}$	$41 \pm 8$	$D_{810}$	$2531 \pm 14$	$\sigma_8(0.57)$	$0.634 \pm 0.016$
$A_{143 \times 217}^{PS}$	$39 \pm 10$	$D_{1420}$	$814.7 \pm 4.8$	$f_{2000}^{143}$	$28.3 \pm 3.0$
$A_{217}^{PS}$	$98 \pm 10$	$D_{2000}$	$231.3 \pm 1.8$	$f_{2000}^{143 \times 217}$	$31.0 \pm 2.2$
$A^{kSZ}$	$< 3.88$	$n_{s,0.002}$	$0.9699 \pm 0.0050$	$f_{2000}^{217}$	$104.8 \pm 2.1$
$A_{100}^{dustTT}$	$7.4 \pm 1.9$	$Y_P$	$0.245391 \pm 0.000093$	$\chi_{lowl}^2$	$15.6 \pm 1.7$
$A_{143}^{dustTT}$	$8.9 \pm 1.8$	$Y_P^{BBN}$	$0.246718 \pm 0.000093$	$\chi_{plik}^2$	$774.8 \pm 5.5$
$A_{143 \times 217}^{dustTT}$	$16.9 \pm 4.1$	$10^5 D/H$	$2.592 \pm 0.039$	$\chi_{6DF}^2$	$0.049 \pm 0.069$
$A_{217}^{dustTT}$	$81.8 \pm 7.3$	$Age/Gyr$	$13.788 \pm 0.030$	$\chi_{MGS}^2$	$1.59 \pm 0.61$
$c_{100}$	$0.99789 \pm 0.00078$	$z_*$	$1089.79 \pm 0.32$	$\chi_{DR11CMass}^2$	$2.91 \pm 0.72$
$c_{217}$	$0.9958 \pm 0.0015$	$r_*$	$144.82 \pm 0.32$	$\chi_{DR11LOWZ}^2$	$0.54 \pm 0.53$
$H_0$	$67.92 \pm 0.61$	$100\theta_*$	$1.04122 \pm 0.00042$	$\chi_{prior}^2$	$7.2 \pm 3.5$
$\Omega_\Lambda$	$0.6931 \pm 0.0080$	$D_A/Gpc$	$13.909 \pm 0.032$	$\chi_{BAO}^2$	$5.1 \pm 1.1$
$\Omega_m$	$0.3069 \pm 0.0080$	$z_{drag}$	$1059.83 \pm 0.45$	$\chi_{CMB}^2$	$790.4 \pm 5.4$
$\Omega_m h^2$	$0.1415 \pm 0.0013$	$r_{drag}$	$147.49 \pm 0.35$		

$\bar{\chi}_{eff}^2 = 802.64$ ;  $R - 1 = 0.00939$

## 2.24 base\_plikHM\_TTTEEE\_lowl

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022371	$0.02232 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.303 \pm 0.084$	$10^5 \text{D/H}$	2.5911	$2.602 \pm 0.032$
$\Omega_c h^2$	0.11884	$0.1192 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.154	$0.153 \pm 0.054$	Age/Gyr	13.7939	$13.801 \pm 0.029$
$100\theta_{\text{MC}}$	1.040868	$1.04085 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.336 \pm 0.080$	$z_*$	1089.815	$1089.91 \pm 0.32$
$\tau$	0.1078	$0.099 \pm 0.024$	$A_{217}^{\text{dust}TE}$	1.657	$1.66 \pm 0.26$	$r_*$	144.731	$144.69 \pm 0.35$
$\ln(10^{10} A_s)$	3.1484	$3.132 \pm 0.047$	$c_{100}$	0.99826	$0.99816 \pm 0.00077$	$100\theta_*$	1.041056	$1.04104 \pm 0.00033$
$n_s$	0.9690	$0.9669 \pm 0.0053$	$c_{217}$	0.99572	$0.9959 \pm 0.0015$	$D_A/\text{Gpc}$	13.9023	$13.899 \pm 0.032$
$y_{\text{cal}}$	1.00018	$1.0003 \pm 0.0025$	$H_0$	67.75	$67.59 \pm 0.73$	$z_{\text{drag}}$	1059.856	$1059.75 \pm 0.33$
$A_{217}^{\text{CIB}}$	61.5	$62.9 \pm 6.6$	$\Omega_\Lambda$	0.6909	$0.6887 \pm 0.0099$	$r_{\text{drag}}$	147.397	$147.38 \pm 0.34$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.63	—	$\Omega_m$	0.3091	$0.3113 \pm 0.0099$	$k_D$	0.140544	$0.14053 \pm 0.00034$
$A_{143}^{\text{tSZ}}$	6.83	$5.5 \pm 1.9$	$\Omega_m h^2$	0.14186	$0.1421 \pm 0.0015$	$100\theta_D$	0.160786	$0.16085 \pm 0.00019$
$A_{100}^{\text{PS}}$	247.6	$257 \pm 27$	$\Omega_m h^3$	0.096102	$0.09604 \pm 0.00030$	$z_{\text{eq}}$	3374.5	$3381 \pm 36$
$A_{143}^{\text{PS}}$	45.9	$42 \pm 8$	$\sigma_8$	0.8516	$0.846 \pm 0.018$	$k_{\text{eq}}$	0.010299	$0.01032 \pm 0.00011$
$A_{143 \times 217}^{\text{PS}}$	49.8	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4735	$0.472 \pm 0.011$	$100\theta_{\text{eq}}$	0.8182	$0.8170 \pm 0.0069$
$A_{217}^{\text{PS}}$	105.4	$98 \pm 11$	$\sigma_8 \Omega_m^{0.25}$	0.6350	$0.632 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45196	$0.4513 \pm 0.0035$
$A^{\text{kSZ}}$	0.00	$< 3.67$	$\sigma_8/h^{0.5}$	1.0347	$1.029 \pm 0.021$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.07159 \pm 0.00055$
$A_{100}^{\text{dust}TT}$	7.34	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.555	$2.543 \pm 0.050$	$H(0.57)$	93.075	$93.00 \pm 0.32$
$A_{143}^{\text{dust}TT}$	8.85	$8.9 \pm 1.8$	$z_{\text{re}}$	12.48	$11.7_{-1.8}^{+2.3}$	$D_A(0.57)$	1385.7	$1387.9 \pm 9.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.90	$16.8 \pm 4.1$	$10^9 A_s$	2.330	$2.30 \pm 0.11$	$F_{\text{AP}}(0.57)$	0.67542	$0.6760 \pm 0.0025$
$A_{217}^{\text{dust}TT}$	82.6	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8781	$1.879 \pm 0.013$	$f\sigma_8(0.57)$	0.4945	$0.491 \pm 0.010$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0813 \pm 0.0057$	$D_{40}$	1245.0	$1246 \pm 14$	$\sigma_8(0.57)$	0.6342	$0.629 \pm 0.014$
$A_{100 \times 143}^{\text{dust}EE}$	0.04916	$0.0489 \pm 0.0050$	$D_{220}$	5727.6	$5729 \pm 39$	$f_{2000}^{143}$	27.36	$28.6 \pm 2.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0985	$0.0995 \pm 0.033$	$D_{810}$	2534.4	$2534 \pm 14$	$f_{2000}^{143 \times 217}$	30.90	$31.4 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1003 \pm 0.0069$	$D_{1420}$	815.72	$814.6 \pm 4.8$	$f_{2000}^{217}$	104.37	$105.1 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2241	$0.224 \pm 0.046$	$D_{2000}$	231.58	$230.9 \pm 1.7$	$\chi_{\text{lowl}}^2$	15.48	$15.7 \pm 1.5$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.9690	$0.9669 \pm 0.0053$	$\chi_{\text{plik}}^2$	2429.9	$2449.4 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1392	$0.140 \pm 0.038$	$Y_{\text{P}}$	0.245393	$0.245368 \pm 0.000076$	$\chi_{\text{prior}}^2$	6.5	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1307	$0.131 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.246720	$0.246695 \pm 0.000077$	$\chi_{\text{CMB}}^2$	2445.4	$2465.1 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 2451.89$ ;  $\bar{\chi}_{\text{eff}}^2 = 2484.29$ ;  $R - 1 = 0.00632$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2\_v1.1\_l2\_29\_B: 15.48 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.87

## 2.25 base\_plikHM\_TTTEEE\_lowl\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022343	$0.02234 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.335 \pm 0.079$	$100\theta_*$	1.041064	$1.04107 \pm 0.00030$
$\Omega_c h^2$	0.11879	$0.1189 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.674	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.9054	$13.904 \pm 0.024$
$100\theta_{\text{MC}}$	1.040878	$1.04089 \pm 0.00030$	$c_{100}$	0.99823	$0.99817 \pm 0.00077$	$z_{\text{drag}}$	1059.780	$1059.78 \pm 0.31$
$\tau$	0.1040	$0.102^{+0.024}_{-0.021}$	$c_{217}$	0.99582	$0.9958 \pm 0.0014$	$r_{\text{drag}}$	147.442	$147.43 \pm 0.26$
$\ln(10^{10} A_s)$	3.1401	$3.137^{+0.046}_{-0.042}$	$H_0$	67.74	$67.72 \pm 0.51$	$k_D$	0.140477	$0.14048 \pm 0.00030$
$n_s$	0.96834	$0.9677 \pm 0.0043$	$\Omega_\Lambda$	0.6910	$0.6906 \pm 0.0068$	$100\theta_D$	0.160828	$0.16083 \pm 0.00018$
$y_{\text{cal}}$	1.00005	$1.0003 \pm 0.0025$	$\Omega_m$	0.3090	$0.3094 \pm 0.0068$	$z_{\text{eq}}$	3372.7	$3374 \pm 25$
$A_{217}^{\text{CIB}}$	64.2	$62.8 \pm 6.5$	$\Omega_m h^2$	0.14178	$0.1418 \pm 0.0011$	$k_{\text{eq}}$	0.010294	$0.010298 \pm 0.000077$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\Omega_m h^3$	0.096045	$0.09605 \pm 0.00030$	$100\theta_{\text{eq}}$	0.81849	$0.8183 \pm 0.0048$
$A_{143}^{\text{tSZ}}$	7.17	$5.5 \pm 1.9$	$\sigma_8$	0.8478	$0.847 \pm 0.018$	$100\theta_{\text{s,eq}}$	0.45211	$0.4520 \pm 0.0025$
$A_{100}^{\text{PS}}$	250.3	$257 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.471 \pm 0.010$	$r_{\text{drag}}/D_V(0.57)$	0.071708	$0.07169 \pm 0.00038$
$A_{143}^{\text{PS}}$	39.8	$42 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6321	$0.631 \pm 0.013$	$H(0.57)$	93.060	$93.05 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	38.7	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0301	$1.029 \pm 0.021$	$D_A(0.57)$	1385.8	$1386.1 \pm 6.8$
$A_{217}^{\text{PS}}$	100.5	$98 \pm 11$	$\langle d^2 \rangle^{1/2}$	2.5459	$2.544 \pm 0.050$	$F_{\text{AP}}(0.57)$	0.67539	$0.6755 \pm 0.0017$
$A^{\text{kSZ}}$	0.01	$< 3.66$	$z_{\text{re}}$	12.18	$12.0^{+2.1}_{-1.6}$	$f\sigma_8(0.57)$	0.4923	$0.492 \pm 0.010$
$A_{100}^{\text{dust}TT}$	7.36	$7.4 \pm 1.9$	$10^9 A_s$	2.311	$2.31 \pm 0.10$	$\sigma_8(0.57)$	0.6314	$0.630 \pm 0.014$
$A_{143}^{\text{dust}TT}$	8.97	$8.8 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877 \pm 0.012$	$f_{2000}^{143}$	27.95	$28.4 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$16.8 \pm 4.2$	$D_{40}$	1243.5	$1246 \pm 14$	$f_{2000}^{143 \times 217}$	31.10	$31.3 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.3	$81.6 \pm 7.4$	$D_{220}$	5725.1	$5729 \pm 39$	$f_{2000}^{217}$	104.82	$105.0 \pm 1.9$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0813 \pm 0.0057$	$D_{810}$	2532.3	$2533 \pm 14$	$\chi_{\text{lowl}}^2$	15.35	$15.6 \pm 1.5$
$A_{100 \times 143}^{\text{dust}EE}$	0.04920	$0.0490 \pm 0.0050$	$D_{1420}$	814.68	$814.6 \pm 4.8$	$\chi_{\text{plik}}^2$	2429.9	$2449.0 \pm 6.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.1004	$0.0995 \pm 0.033$	$D_{2000}$	231.09	$231.0 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0154	$0.050 \pm 0.065$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1004 \pm 0.0069$	$n_{\text{s},0.002}$	0.96834	$0.9677 \pm 0.0043$	$\chi_{\text{MGS}}^2$	1.34	$1.39 \pm 0.49$
$A_{143 \times 217}^{\text{dust}EE}$	0.2219	$0.224 \pm 0.046$	$Y_{\text{P}}$	0.245381	$0.245378 \pm 0.000066$	$\chi_{\text{DR11CMass}}^2$	2.431	$2.80 \pm 0.54$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246707	$0.246704 \pm 0.000066$	$\chi_{\text{DR11LOWZ}}^2$	0.545	$0.68 \pm 0.52$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141 \pm 0.038$	$10^5 D/H$	2.5964	$2.597 \pm 0.028$	$\chi_{\text{prior}}^2$	6.9	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.131 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.7964	$13.797 \pm 0.022$	$\chi_{\text{BAO}}^2$	4.334	$4.91 \pm 0.80$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.302 \pm 0.084$	$z_*$	1089.847	$1089.86 \pm 0.25$	$\chi_{\text{CMB}}^2$	2445.2	$2464.6 \pm 6.6$
$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$r_*$	144.764	$144.75 \pm 0.26$			

Best-fit  $\chi_{\text{eff}}^2 = 2456.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 2488.74$ ;  $R - 1 = 0.01004$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMass: 2.43 DR11LOWZ: 0.55 CMB - commander\_rc2\_v1.1.l2\_29\_B: 15.35 plik\_dx11dr2\_HM\_v18.TTTEEE: 2429.89

## 2.26 base\_plikHM\_TTTEEE\_lowl\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022384	$0.02236 \pm 0.00014$	$A_{217}^{\text{dustTE}}$	1.670	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.856	$1059.81 \pm 0.31$
$\Omega_c h^2$	0.11854	$0.1186 \pm 0.0011$	$c_{100}$	0.99825	$0.99817 \pm 0.00077$	$r_{\text{drag}}$	147.463	$147.47 \pm 0.26$
$100\theta_{\text{MC}}$	1.040934	$1.04091 \pm 0.00030$	$c_{217}$	0.99574	$0.9958 \pm 0.0015$	$k_D$	0.140486	$0.14046 \pm 0.00030$
$\tau$	0.1080	$0.104^{+0.024}_{-0.021}$	$H_0$	67.883	$67.82 \pm 0.50$	$100\theta_D$	0.160787	$0.16082 \pm 0.00018$
$\ln(10^{10} A_s)$	3.1477	$3.140^{+0.046}_{-0.041}$	$\Omega_\Lambda$	0.6928	$0.6920 \pm 0.0066$	$z_{\text{eq}}$	3367.7	$3369 \pm 25$
$n_s$	0.96919	$0.9683 \pm 0.0043$	$\Omega_m$	0.3072	$0.3080 \pm 0.0066$	$k_{\text{eq}}$	0.010279	$0.010283 \pm 0.000075$
$y_{\text{cal}}$	1.00007	$1.0003 \pm 0.0025$	$\Omega_m h^2$	0.14157	$0.1416 \pm 0.0010$	$100\theta_{\text{eq}}$	0.81956	$0.8192 \pm 0.0047$
$A_{217}^{\text{CIB}}$	63.3	$62.7 \pm 6.5$	$\Omega_m h^3$	0.096104	$0.09606 \pm 0.00030$	$100\theta_{\text{s,eq}}$	0.45264	$0.4525 \pm 0.0024$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.40	—	$\sigma_8$	0.8503	$0.847 \pm 0.018$	$r_{\text{drag}}/D_V(0.57)$	0.071804	$0.07177 \pm 0.00037$
$A_{143}^{\text{tSZ}}$	6.97	$5.5 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.470 \pm 0.010$	$H(0.57)$	93.131	$93.10 \pm 0.23$
$A_{100}^{\text{PS}}$	250.1	$256 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6331	$0.631 \pm 0.013$	$D_A(0.57)$	1383.9	$1384.7 \pm 6.7$
$A_{143}^{\text{PS}}$	42.1	$42 \pm 8$	$\sigma_8/h^{0.5}$	1.0321	$1.029 \pm 0.021$	$F_{\text{AP}}(0.57)$	0.67494	$0.6751 \pm 0.0017$
$A_{143 \times 217}^{\text{PS}}$	42.9	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5508	$2.545 \pm 0.050$	$f\sigma_8(0.57)$	0.4933	$0.492 \pm 0.010$
$A_{217}^{\text{PS}}$	102.0	$98 \pm 11$	$z_{\text{re}}$	12.48	$12.1^{+2.0}_{-1.6}$	$\sigma_8(0.57)$	0.6337	$0.631 \pm 0.014$
$A^{\text{kSZ}}$	0.00	$< 3.60$	$10^9 A_s$	2.328	$2.31 \pm 0.10$	$f_{2000}^{143}$	27.57	$28.3 \pm 2.7$
$A_{100}^{\text{dustTT}}$	7.34	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8761	$1.876 \pm 0.011$	$f_{2000}^{143 \times 217}$	30.92	$31.2 \pm 1.9$
$A_{143}^{\text{dustTT}}$	8.85	$8.8 \pm 1.8$	$D_{40}$	1244.3	$1245 \pm 14$	$f_{2000}^{217}$	104.52	$104.9 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.51	$16.8 \pm 4.2$	$D_{220}$	5728.8	$5730 \pm 39$	$\chi_{\text{lowl}}^2$	15.45	$15.6 \pm 1.5$
$A_{217}^{\text{dustTT}}$	81.9	$81.6 \pm 7.4$	$D_{810}$	2532.9	$2533 \pm 14$	$\chi_{\text{plik}}^2$	2430.0	$2449.0 \pm 6.7$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0814 \pm 0.0057$	$D_{1420}$	815.20	$814.8 \pm 4.8$	$\chi_{\text{H070p6}}^2$	0.669	$0.72 \pm 0.25$
$A_{100 \times 143}^{\text{dustEE}}$	0.04920	$0.0491 \pm 0.0050$	$D_{2000}$	231.39	$231.1 \pm 1.6$	$\chi_{\text{JLA}}^2$	706.639	$706.69 \pm 0.16$
$A_{100 \times 217}^{\text{dustEE}}$	0.1004	$0.099 \pm 0.033$	$n_{\text{s},0.002}$	0.96919	$0.9683 \pm 0.0043$	$\chi_{6\text{DF}}^2$	0.0062	$0.040 \pm 0.054$
$A_{143}^{\text{dustEE}}$	0.1005	$0.1005 \pm 0.0069$	$Y_{\text{P}}$	0.245399	$0.245387 \pm 0.000065$	$\chi_{\text{MGS}}^2$	1.47	$1.49 \pm 0.49$
$A_{143 \times 217}^{\text{dustEE}}$	0.2246	$0.224 \pm 0.046$	$Y_{\text{P}}^{\text{BBN}}$	0.246725	$0.246713 \pm 0.000065$	$\chi_{\text{DR11CMass}}^2$	2.413	$2.75 \pm 0.48$
$A_{217}^{\text{dustEE}}$	0.648	$0.65 \pm 0.13$	$10^5 D/H$	2.5887	$2.594 \pm 0.027$	$\chi_{\text{DR11LOWZ}}^2$	0.429	$0.57 \pm 0.46$
$A_{100}^{\text{dustTE}}$	0.1397	$0.141 \pm 0.038$	$\text{Age/Gyr}$	13.7895	$13.793 \pm 0.022$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dustTE}}$	0.1305	$0.131 \pm 0.029$	$z_*$	1089.774	$1089.82 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.321	$4.85 \pm 0.71$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.302 \pm 0.084$	$r_*$	144.798	$144.79 \pm 0.25$	$\chi_{\text{CMB}}^2$	2445.4	$2464.6 \pm 6.6$
$A_{143}^{\text{dustTE}}$	0.153	$0.154 \pm 0.054$	$100\theta_*$	1.041117	$1.04110 \pm 0.00030$			
$A_{143 \times 217}^{\text{dustTE}}$	0.337	$0.335 \pm 0.079$	$D_A/\text{Gpc}$	13.9079	$13.908 \pm 0.024$			

Best-fit  $\chi_{\text{eff}}^2 = 3163.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 3196.11$ ;  $R - 1 = 0.01055$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - commander\_rc2.v1.1\_l2\_29\_B: 15.45 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.95 Hubble -

## 2.27 base\_plikHM\_TTTEEE\_lowl\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.084$	$10^5 \text{D/H}$	$2.601 \pm 0.032$
$\Omega_c h^2$	$0.1191 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	Age/Gyr	$13.801 \pm 0.029$
$100\theta_{\text{MC}}$	$1.04085 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	$0.335 \pm 0.080$	$z_*$	$1089.91 \pm 0.32$
$\tau$	$0.100 \pm 0.024$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.26$	$r_*$	$144.70 \pm 0.34$
$\ln(10^{10} A_s)$	$3.134 \pm 0.045$	$c_{100}$	$0.99817 \pm 0.00077$	$100\theta_*$	$1.04104 \pm 0.00033$
$n_s$	$0.9670 \pm 0.0053$	$c_{217}$	$0.9959 \pm 0.0014$	$D_A/\text{Gpc}$	$13.899 \pm 0.032$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$H_0$	$67.60 \pm 0.73$	$z_{\text{drag}}$	$1059.76 \pm 0.33$
$A_{217}^{\text{CIB}}$	$62.9 \pm 6.6$	$\Omega_\Lambda$	$0.6889 \pm 0.0099$	$r_{\text{drag}}$	$147.38 \pm 0.33$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.3111 \pm 0.0099$	$k_D$	$0.14052 \pm 0.00034$
$A_{143}^{\text{tSZ}}$	$5.5 \pm 1.9$	$\Omega_m h^2$	$0.1421 \pm 0.0015$	$100\theta_D$	$0.16085 \pm 0.00019$
$A_{100}^{\text{PS}}$	$257 \pm 27$	$\Omega_m h^3$	$0.09604 \pm 0.00030$	$z_{\text{eq}}$	$3380 \pm 36$
$A_{143}^{\text{PS}}$	$42 \pm 8$	$\sigma_8$	$0.846 \pm 0.018$	$k_{\text{eq}}$	$0.01032 \pm 0.00011$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	$0.472 \pm 0.011$	$100\theta_{\text{eq}}$	$0.8171 \pm 0.0069$
$A_{217}^{\text{PS}}$	$98 \pm 11$	$\sigma_8 \Omega_m^{0.25}$	$0.632 \pm 0.013$	$100\theta_{s,\text{eq}}$	$0.4514 \pm 0.0035$
$A^{\text{kSZ}}$	$< 3.69$	$\sigma_8/h^{0.5}$	$1.029 \pm 0.020$	$r_{\text{drag}}/D_V(0.57)$	$0.07160 \pm 0.00055$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	$2.545 \pm 0.048$	$H(0.57)$	$93.01 \pm 0.32$
$A_{143}^{\text{dust}TT}$	$8.8 \pm 1.9$	$z_{\text{re}}$	$11.8^{+2.2}_{-1.8}$	$D_A(0.57)$	$1387.7 \pm 9.7$
$A_{143 \times 217}^{\text{dust}TT}$	$16.8 \pm 4.2$	$10^9 A_s$	$2.30 \pm 0.10$	$F_{\text{AP}}(0.57)$	$0.6759 \pm 0.0025$
$A_{217}^{\text{dust}TT}$	$81.6 \pm 7.4$	$10^9 A_s e^{-2\tau}$	$1.879 \pm 0.013$	$f\sigma_8(0.57)$	$0.4918 \pm 0.0098$
$A_{100}^{\text{dust}EE}$	$0.0813 \pm 0.0057$	$D_{40}$	$1246 \pm 14$	$\sigma_8(0.57)$	$0.630 \pm 0.014$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0489 \pm 0.0050$	$D_{220}$	$5729 \pm 39$	$f_{2000}^{143}$	$28.5 \pm 2.8$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0995 \pm 0.033$	$D_{810}$	$2533 \pm 14$	$f_{2000}^{143 \times 217}$	$31.4 \pm 2.0$
$A_{143}^{\text{dust}EE}$	$0.1003 \pm 0.0069$	$D_{1420}$	$814.6 \pm 4.8$	$f_{2000}^{217}$	$105.1 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.046$	$D_{2000}$	$230.9 \pm 1.7$	$\chi_{\text{lowl}}^2$	$15.7 \pm 1.5$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$n_{s,0.002}$	$0.9670 \pm 0.0053$	$\chi_{\text{plik}}^2$	$2449.4 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P$	$0.245369 \pm 0.000077$	$\chi_{\text{prior}}^2$	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$Y_P^{\text{BBN}}$	$0.246696 \pm 0.000077$	$\chi_{\text{CMB}}^2$	$2465.1 \pm 6.7$

$$\bar{\chi}_{\text{eff}}^2 = 2484.26; R - 1 = 0.00864$$

## 2.28 base\_plikHM\_TTTEEE\_lowl\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02234 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	$0.335 \pm 0.079$	$100\theta_*$	$1.04107 \pm 0.00030$
$\Omega_c h^2$	$0.1188 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	$13.904 \pm 0.024$
$100\theta_{\text{MC}}$	$1.04089 \pm 0.00030$	$c_{100}$	$0.99817 \pm 0.00077$	$z_{\text{drag}}$	$1059.78 \pm 0.31$
$\tau$	$0.103 \pm 0.022$	$c_{217}$	$0.9958 \pm 0.0014$	$r_{\text{drag}}$	$147.43 \pm 0.26$
$\ln(10^{10} A_s)$	$3.138 \pm 0.043$	$H_0$	$67.72 \pm 0.51$	$k_D$	$0.14048 \pm 0.00030$
$n_s$	$0.9678 \pm 0.0043$	$\Omega_\Lambda$	$0.6907 \pm 0.0068$	$100\theta_D$	$0.16083 \pm 0.00018$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\Omega_m$	$0.3093 \pm 0.0068$	$z_{\text{eq}}$	$3374 \pm 25$
$A_{217}^{\text{CIB}}$	$62.8 \pm 6.5$	$\Omega_m h^2$	$0.1418 \pm 0.0011$	$k_{\text{eq}}$	$0.010298 \pm 0.000077$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09605 \pm 0.00030$	$100\theta_{\text{eq}}$	$0.8183 \pm 0.0048$
$A_{143}^{\text{tSZ}}$	$5.5 \pm 1.9$	$\sigma_8$	$0.847 \pm 0.017$	$100\theta_{s,\text{eq}}$	$0.4520 \pm 0.0025$
$A_{100}^{\text{PS}}$	$257 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	$0.471 \pm 0.010$	$r_{\text{drag}}/D_V(0.57)$	$0.07170 \pm 0.00038$
$A_{143}^{\text{PS}}$	$42 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	$0.632 \pm 0.013$	$H(0.57)$	$93.06 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8/h^{0.5}$	$1.029 \pm 0.021$	$D_A(0.57)$	$1386.1 \pm 6.8$
$A_{217}^{\text{PS}}$	$98 \pm 11$	$\langle d^2 \rangle^{1/2}$	$2.545 \pm 0.049$	$F_{\text{AP}}(0.57)$	$0.6755 \pm 0.0017$
$A^{\text{kSZ}}$	$< 3.65$	$z_{\text{re}}$	$12.0^{+2.0}_{-1.6}$	$f\sigma_8(0.57)$	$0.4918 \pm 0.0099$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$10^9 A_s$	$2.307 \pm 0.098$	$\sigma_8(0.57)$	$0.631 \pm 0.013$
$A_{143}^{\text{dust}TT}$	$8.8 \pm 1.8$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.012$	$f_{2000}^{143}$	$28.4 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	$16.8 \pm 4.2$	$D_{40}$	$1246 \pm 14$	$f_{2000}^{143 \times 217}$	$31.3 \pm 1.9$
$A_{217}^{\text{dust}TT}$	$81.6 \pm 7.4$	$D_{220}$	$5729 \pm 39$	$f_{2000}^{217}$	$105.0 \pm 1.9$
$A_{100}^{\text{dust}EE}$	$0.0813 \pm 0.0057$	$D_{810}$	$2533 \pm 14$	$\chi_{\text{lowl}}^2$	$15.6 \pm 1.5$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0490 \pm 0.0050$	$D_{1420}$	$814.6 \pm 4.8$	$\chi_{\text{plik}}^2$	$2448.9 \pm 6.6$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0996 \pm 0.033$	$D_{2000}$	$231.0 \pm 1.6$	$\chi_{6\text{DF}}^2$	$0.049 \pm 0.065$
$A_{143}^{\text{dust}EE}$	$0.1004 \pm 0.0069$	$n_{s,0.002}$	$0.9678 \pm 0.0043$	$\chi_{\text{MGS}}^2$	$1.39 \pm 0.49$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.046$	$Y_{\text{P}}$	$0.245378 \pm 0.000066$	$\chi_{\text{DR11CMass}}^2$	$2.79 \pm 0.54$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	$0.246705 \pm 0.000066$	$\chi_{\text{DR11LOWZ}}^2$	$0.67 \pm 0.52$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$10^5 \text{D/H}$	$2.597 \pm 0.028$	$\chi_{\text{prior}}^2$	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$\text{Age/Gyr}$	$13.797 \pm 0.022$	$\chi_{\text{BAO}}^2$	$4.91 \pm 0.79$
$A_{100 \times 217}^{\text{dust}TE}$	$0.302 \pm 0.084$	$z_*$	$1089.86 \pm 0.25$	$\chi_{\text{CMB}}^2$	$2464.6 \pm 6.6$
$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	$r_*$	$144.75 \pm 0.26$		

$$\bar{\chi}_{\text{eff}}^2 = 2488.68; R - 1 = 0.00998$$

## 2.29 base\_plikHM\_TT\_lowl\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022296	$0.02228 \pm 0.00026$	$\Omega_m h^2$	0.14114	$0.1412 \pm 0.0024$	$z_{\text{drag}}$	1059.628	$1059.60 \pm 0.50$
$\Omega_c h^2$	0.11819	$0.1182 \pm 0.0025$	$\Omega_m h^3$	0.095945	$0.09592 \pm 0.00045$	$r_{\text{drag}}$	147.65	$147.67 \pm 0.52$
$100\theta_{\text{MC}}$	1.04106	$1.04107 \pm 0.00052$	$\sigma_8$	0.8175	$0.817 \pm 0.012$	$k_{\text{D}}$	0.14022	$0.14019 \pm 0.00052$
$\tau$	0.0706	$0.070 \pm 0.024$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.4515 \pm 0.0092$	$100\theta_{\text{D}}$	0.160941	$0.16097 \pm 0.00028$
$\ln(10^{10} A_s)$	3.0708	$3.069 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.6072 \pm 0.0078$	$z_{\text{eq}}$	3357	$3358 \pm 56$
$n_s$	0.9689	$0.9686 \pm 0.0074$	$\sigma_8/h^{0.5}$	0.9915	$0.991 \pm 0.012$	$k_{\text{eq}}$	0.010247	$0.01025 \pm 0.00017$
$y_{\text{cal}}$	1.00005	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4518	$2.451 \pm 0.029$	$100\theta_{\text{eq}}$	0.8213	$0.821 \pm 0.011$
$A_{217}^{\text{CIB}}$	67.3	$64.4 \pm 6.7$	$z_{\text{re}}$	9.26	$9.0^{+2.5}_{-2.1}$	$100\theta_{\text{s,eq}}$	0.4536	$0.4537 \pm 0.0056$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.156	$2.154^{+0.088}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.07194 \pm 0.00089$
$A_{143}^{\text{tSZ}}$	7.16	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8720	$1.872 \pm 0.015$	$H(0.57)$	93.13	$93.14^{+0.50}_{-0.57}$
$A_{100}^{\text{PS}}$	254.4	$259 \pm 28$	$D_{40}$	1224.4	$1227 \pm 13$	$D_A(0.57)$	1382.9	$1383 \pm 16$
$A_{143}^{\text{PS}}$	39.2	$44 \pm 8$	$D_{220}$	5716.7	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67448	$0.6746 \pm 0.0040$
$A_{143 \times 217}^{\text{PS}}$	32.6	$38 \pm 10$	$D_{810}$	2531.5	$2531 \pm 14$	$f\sigma_8(0.57)$	0.4737	$0.4732 \pm 0.0058$
$A_{217}^{\text{PS}}$	97.1	$96 \pm 10$	$D_{1420}$	814.8	$814.5 \pm 5.1$	$\sigma_8(0.57)$	0.6097	$0.609 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.92$	$D_{2000}$	230.27	$230.1 \pm 1.9$	$f_{2000}^{143}$	29.93	$30.3 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9689	$0.9686 \pm 0.0074$	$f_{2000}^{143 \times 217}$	32.47	$32.7 \pm 2.2$
$A_{143}^{\text{dustTT}}$	9.06	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245360	$0.24535 \pm 0.00012$	$f_{2000}^{217}$	106.03	$106.2 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246687	$0.24668 \pm 0.00012$	$\chi_{\text{lensing}}^2$	9.37	$10.1 \pm 1.8$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.6053	$2.609 \pm 0.049$	$\chi_{\text{lowl}}^2$	13.29	$13.52 \pm 0.96$
$c_{100}$	0.99790	$0.99787 \pm 0.00078$	Age/Gyr	13.7928	$13.794 \pm 0.046$	$\chi_{\text{plik}}^2$	766.1	$779.7 \pm 5.6$
$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$z_*$	1089.85	$1089.88 \pm 0.50$	$\chi_{\text{prior}}^2$	2.08	$7.5 \pm 3.6$
$H_0$	67.98	$68.0 \pm 1.2$	$r_*$	144.96	$144.96 \pm 0.54$	$\chi_{\text{CMB}}^2$	788.7	$803.4 \pm 5.5$
$\Omega_\Lambda$	0.6946	$0.694 \pm 0.015$	$100\theta_*$	1.04126	$1.04127 \pm 0.00051$			
$\Omega_m$	0.3054	$0.306 \pm 0.015$	$D_A/\text{Gpc}$	13.9212	$13.922 \pm 0.049$			

Best-fit  $\chi_{\text{eff}}^2 = 790.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 810.82$ ;  $R - 1 = 0.00684$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.37 commander\_rc2\_v1.1\_l2\_29\_B: 13.29 plik\_dx11dr2\_HM\_v18\_TT: 766.07



### 2.30 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022263	$0.02226 \pm 0.00020$	$\Omega_m h^3$	0.095919	$0.09591 \pm 0.00045$	$k_D$	0.140247	$0.14023 \pm 0.00043$
$\Omega_c h^2$	0.11853	$0.1185 \pm 0.0013$	$\sigma_8$	0.8164	$0.816 \pm 0.011$	$100\theta_D$	0.160969	$0.16098 \pm 0.00026$
$100\theta_{MC}$	1.041018	$1.04103 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	0.4527	$0.4523 \pm 0.0067$	$z_{eq}$	3364.4	$3364 \pm 30$
$\tau$	0.0677	$0.067 \pm 0.016$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.6074 \pm 0.0076$	$k_{eq}$	0.010269	$0.010268 \pm 0.000092$
$\ln(10^{10} A_s)$	3.0656	$3.064 \pm 0.030$	$\sigma_8/h^{0.5}$	0.9913	$0.990 \pm 0.012$	$100\theta_{eq}$	0.8199	$0.8199 \pm 0.0057$
$n_s$	0.96808	$0.9677 \pm 0.0047$	$\langle d^2 \rangle^{1/2}$	2.4508	$2.450 \pm 0.029$	$100\theta_{s,eq}$	0.45291	$0.4529 \pm 0.0029$
$y_{cal}$	0.99997	$1.0001 \pm 0.0025$	$z_{re}$	9.00	$8.8^{+1.7}_{-1.4}$	$r_{drag}/D_V(0.57)$	0.071814	$0.07182 \pm 0.00045$
$A_{217}^{CIB}$	67.5	$64.6 \pm 6.6$	$10^9 A_s$	2.145	$2.142 \pm 0.064$	$H(0.57)$	93.063	$93.06 \pm 0.29$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8732	$1.873 \pm 0.012$	$D_A(0.57)$	1385.0	$1385.1 \pm 8.3$
$A_{143}^{tSZ}$	7.19	$5.1 \pm 2.0$	$D_{40}$	1224.9	$1227 \pm 12$	$F_{AP}(0.57)$	0.67501	$0.6750 \pm 0.0020$
$A_{100}^{PS}$	254.0	$260 \pm 28$	$D_{220}$	5713.9	$5717 \pm 41$	$f\sigma_8(0.57)$	0.4736	$0.4732 \pm 0.0059$
$A_{143}^{PS}$	39.4	$44 \pm 8$	$D_{810}$	2531.6	$2532 \pm 14$	$\sigma_8(0.57)$	0.6083	$0.6078 \pm 0.0090$
$A_{143 \times 217}^{PS}$	32.8	$38 \pm 10$	$D_{1420}$	814.57	$814.4 \pm 5.0$	$f_{2000}^{143}$	30.03	$30.5 \pm 2.9$
$A_{217}^{PS}$	97.1	$96 \pm 10$	$D_{2000}$	230.10	$230.0 \pm 1.8$	$f_{2000}^{143 \times 217}$	32.60	$32.8 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.90$	$n_{s,0.002}$	0.96808	$0.9677 \pm 0.0047$	$f_{2000}^{217}$	106.15	$106.3 \pm 2.0$
$A_{100}^{dustTT}$	7.45	$7.5 \pm 1.9$	$Y_P$	0.245346	$0.245340 \pm 0.000092$	$\chi_{lensing}^2$	9.36	$10.1 \pm 1.8$
$A_{143}^{dustTT}$	9.09	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246672	$0.246667 \pm 0.000093$	$\chi_{lowl}^2$	13.34	$13.50 \pm 0.84$
$A_{143 \times 217}^{dustTT}$	17.77	$17.2 \pm 4.1$	$10^5 D/H$	2.6115	$2.613 \pm 0.039$	$\chi_{plik}^2$	766.0	$779.1 \pm 5.5$
$A_{217}^{dustTT}$	82.0	$81.7 \pm 7.3$	Age/Gyr	13.7990	$13.799 \pm 0.030$	$\chi_{6DF}^2$	0.0061	$0.051 \pm 0.071$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$z_*$	1089.924	$1089.94 \pm 0.32$	$\chi_{MGS}^2$	1.47	$1.55 \pm 0.61$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$r_*$	144.895	$144.90 \pm 0.32$	$\chi_{DR11CMass}^2$	2.402	$2.90 \pm 0.71$
$H_0$	67.82	$67.82 \pm 0.61$	$100\theta_*$	1.041218	$1.04123 \pm 0.00042$	$\chi_{DR11LOWZ}^2$	0.424	$0.58 \pm 0.55$
$\Omega_\Lambda$	0.6925	$0.6924 \pm 0.0080$	$D_A/Gpc$	13.9160	$13.916 \pm 0.031$	$\chi_{prior}^2$	2.08	$7.4 \pm 3.5$
$\Omega_m$	0.3075	$0.3076 \pm 0.0080$	$z_{drag}$	1059.589	$1059.57 \pm 0.45$	$\chi_{CMB}^2$	788.7	$802.8 \pm 5.4$
$\Omega_m h^2$	0.14143	$0.1414 \pm 0.0013$	$r_{drag}$	147.601	$147.61 \pm 0.34$	$\chi_{BAO}^2$	4.30	$5.1 \pm 1.1$

Best-fit  $\chi_{eff}^2 = 795.13$ ;  $\bar{\chi}_{eff}^2 = 815.27$ ;  $R - 1 = 0.01077$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.40 DR11LOWZ: 0.42 CMB - smica\_g30\_ftl\_full\_pp: 9.36 commander\_rc2\_v1.1\_l2\_29\_B: 13.34 plik\_dx11dr2\_HM.v18.TT: 766.05

### 2.31 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02228 \pm 0.00020$	$\sigma_8$	0.8177	$0.817 \pm 0.011$	$z_{\text{eq}}$	3359.3	$3358 \pm 29$
$\Omega_c h^2$	0.11827	$0.1183 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.4515 \pm 0.0066$	$k_{\text{eq}}$	0.010253	$0.010250 \pm 0.000089$
$100\theta_{\text{MC}}$	1.041084	$1.04107 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.6072 \pm 0.0076$	$100\theta_{\text{eq}}$	0.8210	$0.8211 \pm 0.0055$
$\tau$	0.0704	$0.069 \pm 0.016$	$\sigma_8/h^{0.5}$	0.9919	$0.991 \pm 0.012$	$100\theta_{\text{s,eq}}$	0.45345	$0.4535 \pm 0.0028$
$\ln(10^{10} A_s)$	3.0708	$3.068 \pm 0.030$	$\langle d^2 \rangle^{1/2}$	2.4527	$2.450 \pm 0.028$	$r_{\text{drag}}/D_V(0.57)$	0.071914	$0.07192 \pm 0.00044$
$n_s$	0.96881	$0.9684 \pm 0.0046$	$z_{\text{re}}$	9.24	$9.1^{+1.7}_{-1.3}$	$H(0.57)$	93.136	$93.12 \pm 0.29$
$y_{\text{cal}}$	1.00006	$1.0001 \pm 0.0025$	$10^9 A_s$	2.156	$2.151 \pm 0.064$	$D_A(0.57)$	1383.0	$1383.2 \pm 8.0$
$A_{217}^{\text{CIB}}$	67.3	$64.5 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8726	$1.872 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67456	$0.6746 \pm 0.0020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1224.9	$1226 \pm 12$	$f\sigma_8(0.57)$	0.4739	$0.4732 \pm 0.0059$
$A_{143}^{\text{tSZ}}$	7.21	$5.1 \pm 1.9$	$D_{220}$	5718.2	$5718 \pm 41$	$\sigma_8(0.57)$	0.6097	$0.6089 \pm 0.0089$
$A_{100}^{\text{PS}}$	253.1	$259 \pm 28$	$D_{810}$	2532.1	$2531 \pm 14$	$f_{2000}^{143}$	29.84	$30.3 \pm 2.8$
$A_{143}^{\text{PS}}$	38.9	$44 \pm 8$	$D_{1420}$	815.06	$814.6 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.41	$32.7 \pm 2.0$
$A_{143 \times 217}^{\text{PS}}$	32.4	$38 \pm 10$	$D_{2000}$	230.36	$230.1 \pm 1.7$	$f_{2000}^{217}$	105.94	$106.2 \pm 2.0$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$n_{\text{s},0.002}$	0.96881	$0.9684 \pm 0.0046$	$\chi_{\text{lensing}}^2$	9.43	$10.1 \pm 1.8$
$A^{\text{kSZ}}$	0.00	$< 4.84$	$Y_{\text{P}}$	0.245364	$0.245353 \pm 0.000091$	$\chi_{\text{lowl}}^2$	13.33	$13.44 \pm 0.83$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.246679 \pm 0.000091$	$\chi_{\text{plik}}^2$	765.9	$779.2 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.11	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6035	$2.608 \pm 0.038$	$\chi_{\text{H070p6}}^2$	0.630	$0.67 \pm 0.28$
$A_{143 \times 217}^{\text{dustTT}}$	17.74	$17.2 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.7918	$13.794 \pm 0.030$	$\chi_{\text{JLA}}^2$	706.607	$706.66 \pm 0.17$
$A_{217}^{\text{dustTT}}$	82.2	$81.7 \pm 7.3$	$z_*$	1089.849	$1089.88 \pm 0.31$	$\chi_{6\text{DF}}^2$	0.0009	$0.043 \pm 0.061$
$c_{100}$	0.99788	$0.99787 \pm 0.00078$	$r_*$	144.930	$144.95 \pm 0.31$	$\chi_{\text{MGS}}^2$	1.61	$1.69 \pm 0.60$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$100\theta_*$	1.041276	$1.04127 \pm 0.00041$	$\chi_{\text{DR11CMass}}^2$	2.436	$2.90 \pm 0.71$
$H_0$	67.97	$67.96 \pm 0.59$	$D_A/\text{Gpc}$	13.9185	$13.921 \pm 0.031$	$\chi_{\text{DR11LOWZ}}^2$	0.319	$0.46 \pm 0.47$
$\Omega_\Lambda$	0.6943	$0.6942 \pm 0.0077$	$z_{\text{drag}}$	1059.666	$1059.61 \pm 0.44$	$\chi_{\text{prior}}^2$	2.16	$7.4 \pm 3.5$
$\Omega_m$	0.3057	$0.3058 \pm 0.0077$	$r_{\text{drag}}$	147.623	$147.65 \pm 0.34$	$\chi_{\text{CMB}}^2$	788.7	$802.7 \pm 5.4$
$\Omega_m h^2$	0.14122	$0.1412 \pm 0.0012$	$k_{\text{D}}$	0.140258	$0.14021 \pm 0.00043$	$\chi_{\text{BAO}}^2$	4.36	$5.1 \pm 1.1$
$\Omega_m h^3$	0.095981	$0.09593 \pm 0.00045$	$100\theta_{\text{D}}$	0.160928	$0.16096 \pm 0.00025$			

Best-fit  $\chi_{\text{eff}}^2 = 1502.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 1522.55$ ;  $R - 1 = 0.01084$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 9.43 commander\_rc2\_v1.1\_l2\_29\_B: 13.33 plik\_dx11dr2\_HM\_v18\_TT: 765.90 Hubble - H070p6: 0.63 SN - JLA December\_2013: 706.61

## 2.32 base\_plikHM\_TT\_lowl\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232 \pm 0.00024$	$\Omega_m h^2$	$0.1407^{+0.0023}_{-0.0019}$	$z_{\text{drag}}$	$1059.65 \pm 0.48$
$\Omega_c h^2$	$0.1177^{+0.0025}_{-0.0021}$	$\Omega_m h^3$	$0.09594 \pm 0.00046$	$r_{\text{drag}}$	$147.76^{+0.45}_{-0.52}$
$100\theta_{\text{MC}}$	$1.04115 \pm 0.00049$	$\sigma_8$	$0.8195^{+0.0093}_{-0.013}$	$k_{\text{D}}$	$0.14012 \pm 0.00050$
$\tau$	$0.076^{+0.015}_{-0.026}$	$\sigma_8 \Omega_m^{0.5}$	$0.4507 \pm 0.0090$	$100\theta_{\text{D}}$	$0.16094 \pm 0.00027$
$\ln(10^{10} A_s)$	$3.079^{+0.028}_{-0.045}$	$\sigma_8 \Omega_m^{0.25}$	$0.6077 \pm 0.0077$	$z_{\text{eq}}$	$3346^{+56}_{-47}$
$n_s$	$0.9700^{+0.0062}_{-0.0076}$	$\sigma_8/h^{0.5}$	$0.992 \pm 0.011$	$k_{\text{eq}}$	$0.01021^{+0.00017}_{-0.00014}$
$y_{\text{cal}}$	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.455 \pm 0.027$	$100\theta_{\text{eq}}$	$0.8236^{+0.0088}_{-0.011}$
$A_{217}^{\text{CIB}}$	$64.3 \pm 6.7$	$z_{\text{re}}$	$9.6^{+1.6}_{-2.1}$	$100\theta_{\text{s,eq}}$	$0.4548^{+0.0045}_{-0.0057}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.176^{+0.058}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	$0.07212^{+0.00070}_{-0.00091}$
$A_{143}^{\text{tSZ}}$	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.869 \pm 0.014$	$H(0.57)$	$93.24^{+0.41}_{-0.54}$
$A_{100}^{\text{PS}}$	$258 \pm 28$	$D_{40}$	$1225 \pm 12$	$D_A(0.57)$	$1380^{+16}_{-13}$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$D_{220}$	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6737^{+0.0039}_{-0.0033}$
$A_{143 \times 217}^{\text{PS}}$	$38 \pm 10$	$D_{810}$	$2530 \pm 14$	$f\sigma_8(0.57)$	$0.4740 \pm 0.0055$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$D_{1420}$	$814.6 \pm 5.1$	$\sigma_8(0.57)$	$0.6119^{+0.0080}_{-0.013}$
$A^{\text{kSZ}}$	$< 4.77$	$D_{2000}$	$230.3 \pm 1.9$	$f_{2000}^{143}$	$30.0 \pm 2.9$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	$0.9700^{+0.0062}_{-0.0076}$	$f_{2000}^{143 \times 217}$	$32.4 \pm 2.1$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.8$	$Y_{\text{P}}$	$0.24537 \pm 0.00011$	$f_{2000}^{217}$	$106.0 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	$0.24670 \pm 0.00011$	$\chi_{\text{lensing}}^2$	$10.2 \pm 1.9$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.3$	$10^5 \text{D/H}$	$2.601 \pm 0.046$	$\chi_{\text{lowl}}^2$	$13.43 \pm 0.91$
$c_{100}$	$0.99788 \pm 0.00078$	$\text{Age/Gyr}$	$13.785^{+0.046}_{-0.040}$	$\chi_{\text{plik}}^2$	$779.5 \pm 5.7$
$c_{217}$	$0.9960 \pm 0.0014$	$z_*$	$1089.78^{+0.50}_{-0.44}$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$H_0$	$68.21^{+0.94}_{-1.2}$	$r_*$	$145.07^{+0.45}_{-0.55}$	$\chi_{\text{CMB}}^2$	$803.2 \pm 5.5$
$\Omega_\Lambda$	$0.697^{+0.013}_{-0.015}$	$100\theta_*$	$1.04134 \pm 0.00048$		
$\Omega_m$	$0.303^{+0.015}_{-0.013}$	$D_A/\text{Gpc}$	$13.931^{+0.042}_{-0.049}$		

$$\bar{\chi}_{\text{eff}}^2 = 810.60; R - 1 = 0.00977$$

### 2.33 base\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02227 \pm 0.00020$	$\Omega_m h^3$	$0.09592 \pm 0.00045$	$k_D$	$0.14022 \pm 0.00043$
$\Omega_c h^2$	$0.1184 \pm 0.0013$	$\sigma_8$	$0.8171^{+0.0091}_{-0.011}$	$100\theta_D$	$0.16098 \pm 0.00026$
$100\theta_{MC}$	$1.04105 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	$0.4526 \pm 0.0067$	$z_{eq}$	$3362 \pm 29$
$\tau$	$0.069^{+0.013}_{-0.017}$	$\sigma_8 \Omega_m^{0.25}$	$0.6081 \pm 0.0072$	$k_{eq}$	$0.010261 \pm 0.000089$
$\ln(10^{10} A_s)$	$3.068^{+0.024}_{-0.031}$	$\sigma_8/h^{0.5}$	$0.992 \pm 0.011$	$100\theta_{eq}$	$0.8204 \pm 0.0055$
$n_s$	$0.9681 \pm 0.0046$	$\langle d^2 \rangle^{1/2}$	$2.453 \pm 0.026$	$100\theta_{s,eq}$	$0.4532 \pm 0.0028$
$y_{cal}$	$1.0001 \pm 0.0025$	$z_{re}$	$9.1 \pm 1.3$	$r_{drag}/D_V(0.57)$	$0.07186 \pm 0.00043$
$A_{217}^{CIB}$	$64.5 \pm 6.7$	$10^9 A_s$	$2.152^{+0.050}_{-0.069}$	$H(0.57)$	$93.09 \pm 0.28$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.873 \pm 0.011$	$D_A(0.57)$	$1384.3 \pm 7.9$
$A_{143}^{tSZ}$	$5.1 \pm 1.9$	$D_{40}$	$1226 \pm 12$	$F_{AP}(0.57)$	$0.6748 \pm 0.0020$
$A_{100}^{PS}$	$259 \pm 28$	$D_{220}$	$5716 \pm 41$	$f\sigma_8(0.57)$	$0.4738 \pm 0.0054$
$A_{143}^{PS}$	$44 \pm 8$	$D_{810}$	$2531 \pm 14$	$\sigma_8(0.57)$	$0.6090^{+0.0072}_{-0.0093}$
$A_{143 \times 217}^{PS}$	$38 \pm 10$	$D_{1420}$	$814.3 \pm 5.0$	$f_{2000}^{143}$	$30.4 \pm 2.8$
$A_{217}^{PS}$	$96 \pm 10$	$D_{2000}$	$230.0 \pm 1.7$	$f_{2000}^{143 \times 217}$	$32.7 \pm 2.0$
$A^{kSZ}$	$< 4.87$	$n_{s,0.002}$	$0.9681 \pm 0.0046$	$f_{2000}^{217}$	$106.2 \pm 2.0$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P$	$0.245345 \pm 0.000091$	$\chi_{lensing}^2$	$10.1 \pm 1.8$
$A_{143}^{dustTT}$	$9.1 \pm 1.8$	$Y_P^{BBN}$	$0.246671 \pm 0.000092$	$\chi_{lowl}^2$	$13.50 \pm 0.84$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.1$	$10^5 D/H$	$2.611 \pm 0.038$	$\chi_{plik}^2$	$778.9 \pm 5.4$
$A_{217}^{dustTT}$	$81.7 \pm 7.3$	$Age/Gyr$	$13.797 \pm 0.029$	$\chi_{6DF}^2$	$0.045 \pm 0.061$
$c_{100}$	$0.99787 \pm 0.00078$	$z_*$	$1089.91 \pm 0.31$	$\chi_{MGS}^2$	$1.60 \pm 0.59$
$c_{217}$	$0.9960 \pm 0.0014$	$r_*$	$144.92 \pm 0.31$	$\chi_{DR11CMass}^2$	$2.87 \pm 0.66$
$H_0$	$67.88 \pm 0.58$	$100\theta_*$	$1.04125 \pm 0.00041$	$\chi_{DR11LOWZ}^2$	$0.52 \pm 0.49$
$\Omega_\Lambda$	$0.6931 \pm 0.0076$	$D_A/Gpc$	$13.918 \pm 0.031$	$\chi_{prior}^2$	$7.4 \pm 3.5$
$\Omega_m$	$0.3069 \pm 0.0076$	$z_{drag}$	$1059.58 \pm 0.44$	$\chi_{CMB}^2$	$802.6 \pm 5.3$
$\Omega_m h^2$	$0.1413 \pm 0.0012$	$r_{drag}$	$147.63 \pm 0.34$	$\chi_{BAO}^2$	$5.0 \pm 1.0$

$$\bar{\chi}_{eff}^2 = 815.05; R - 1 = 0.01185$$

### 2.34 base\_plikHM\_TT\_lowl\_lensing\_post\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022162	$0.02217^{+0.00020}_{-0.00022}$	$\Omega_m h^2$	0.14280	$0.1425 \pm 0.0014$	$z_{\text{drag}}$	1059.437	$1059.45 \pm 0.45$
$\Omega_c h^2$	0.11999	$0.1196 \pm 0.0015$	$\Omega_m h^3$	0.095895	$0.09588 \pm 0.00044$	$r_{\text{drag}}$	147.326	$147.41 \pm 0.37$
$100\theta_{\text{MC}}$	1.040820	$1.04087 \pm 0.00042$	$\sigma_8$	0.8078	$0.8092 \pm 0.0063$	$k_D$	0.140461	$0.14038 \pm 0.00044$
$\tau$	0.0502	$0.0538^{+0.0049}_{-0.010}$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.4539 \pm 0.0087$	$100\theta_D$	0.161034	$0.16104 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0347	$3.041^{+0.011}_{-0.018}$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.6060 \pm 0.0076$	$z_{\text{eq}}$	3397.1	$3389 \pm 35$
$n_s$	0.96411	$0.9645 \pm 0.0046$	$\sigma_8/h^{0.5}$	0.9858	$0.986 \pm 0.010$	$k_{\text{eq}}$	0.010368	$0.01034 \pm 0.00011$
$y_{\text{cal}}$	1.00024	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4367	$2.440 \pm 0.024$	$100\theta_{\text{eq}}$	0.8136	$0.8152^{+0.0063}_{-0.0070}$
$A_{217}^{\text{CIB}}$	68.2	$65.2 \pm 6.6$	$z_{\text{re}}$	7.30	$< 7.95$	$100\theta_{\text{s,eq}}$	0.44967	$0.4505^{+0.0032}_{-0.0036}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.0796	$2.093^{+0.023}_{-0.037}$	$r_{\text{drag}}/D_V(0.57)$	0.07131	$0.07143^{+0.00049}_{-0.00056}$
$A_{143}^{\text{tSZ}}$	7.10	$5.0 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8809	$1.879 \pm 0.011$	$H(0.57)$	92.790	$92.85 \pm 0.31$
$A_{100}^{\text{PS}}$	257.0	$262 \pm 27$	$D_{40}$	1229.2	$1230 \pm 12$	$D_A(0.57)$	1393.9	$1391.9 \pm 9.3$
$A_{143}^{\text{PS}}$	41.1	$45 \pm 8$	$D_{220}$	5714.2	$5717 \pm 41$	$F_{\text{AP}}(0.57)$	0.67734	$0.6768 \pm 0.0024$
$A_{143 \times 217}^{\text{PS}}$	33.8	$39 \pm 10$	$D_{810}$	2535.4	$2534 \pm 13$	$f\sigma_8(0.57)$	0.4710	$0.4712 \pm 0.0050$
$A_{217}^{\text{PS}}$	97.3	$96 \pm 10$	$D_{1420}$	814.7	$814.2 \pm 5.1$	$\sigma_8(0.57)$	0.59972	$0.6013^{+0.0038}_{-0.0052}$
$A^{\text{kSZ}}$	0.01	$< 5.09$	$D_{2000}$	229.69	$229.6 \pm 1.8$	$f_{2000}^{143}$	30.81	$31.1 \pm 2.8$
$A_{100}^{\text{dustTT}}$	7.36	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.96411	$0.9645 \pm 0.0046$	$f_{2000}^{143 \times 217}$	33.29	$33.4 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245299	$0.245303 \pm 0.000095$	$f_{2000}^{217}$	106.76	$106.8 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.90	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246625	$0.246629 \pm 0.000096$	$\chi_{\text{lensing}}^2$	8.99	$9.7 \pm 1.2$
$A_{217}^{\text{dustTT}}$	82.1	$81.6 \pm 7.4$	$10^5 D/H$	2.6306	$2.629 \pm 0.040$	$\chi_{\text{lowl}}^2$	13.53	$13.66 \pm 0.94$
$c_{100}$	0.99789	$0.99789 \pm 0.00079$	Age/Gyr	13.8213	$13.817 \pm 0.031$	$\chi_{\text{plik}}^2$	766.9	$779.7 \pm 5.5$
$c_{217}$	0.99609	$0.9961 \pm 0.0014$	$z_*$	1090.181	$1090.14 \pm 0.35$	$\chi_{\text{prior}}^2$	2.19	$8.4 \pm 3.9$
$H_0$	67.15	$67.31 \pm 0.69$	$r_*$	144.591	$144.68 \pm 0.36$	$\chi_{\text{CMB}}^2$	789.4	$803.0 \pm 5.4$
$\Omega_\Lambda$	0.6833	$0.6854 \pm 0.0094$	$100\theta_*$	1.041031	$1.04107 \pm 0.00041$			
$\Omega_m$	0.3167	$0.3146 \pm 0.0094$	$D_A/\text{Gpc}$	13.8892	$13.897 \pm 0.034$			

Best-fit  $\chi_{\text{eff}}^2 = 791.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 811.42$ ;  $R - 1 = 0.01094$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.99 commander\_rc2\_v1.1\_l2.29\_B: 13.53 plik\_dx11dr2\_HM\_v18.TT: 766.93

### 2.35 base\_plikHM\_TTTEEE\_lowl\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022267	$0.02226 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$z_*$	1089.981	$1090.01 \pm 0.32$
$\Omega_c h^2$	0.11921	$0.1193 \pm 0.0016$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$r_*$	144.715	$144.69 \pm 0.34$
$100\theta_{\text{MC}}$	1.040865	$1.04084 \pm 0.00033$	$A_{217}^{\text{dust}TE}$	1.670	$1.67 \pm 0.26$	$100\theta_*$	1.041061	$1.04103 \pm 0.00032$
$\tau$	0.0634	$0.062 \pm 0.017$	$c_{100}$	0.99815	$0.99814 \pm 0.00077$	$D_A/\text{Gpc}$	13.9008	$13.899 \pm 0.031$
$\ln(10^{10} A_s)$	3.0588	$3.057 \pm 0.031$	$c_{217}$	0.99604	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.628	$1059.62 \pm 0.32$
$n_s$	0.9658	$0.9650 \pm 0.0051$	$H_0$	67.53	$67.47 \pm 0.71$	$r_{\text{drag}}$	147.418	$147.39 \pm 0.33$
$y_{\text{cal}}$	0.99980	$1.0002 \pm 0.0025$	$\Omega_\Lambda$	0.6884	$0.6873 \pm 0.0098$	$k_D$	0.140446	$0.14046 \pm 0.00033$
$A_{217}^{\text{CIB}}$	67.7	$64.7 \pm 6.5$	$\Omega_m$	0.3116	$0.3127 \pm 0.0098$	$100\theta_D$	0.160917	$0.16093 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14212	$0.1422 \pm 0.0015$	$z_{\text{eq}}$	3380.7	$3384 \pm 35$
$A_{143}^{\text{tSZ}}$	7.31	$5.2^{+2.2}_{-2.0}$	$\Omega_m h^3$	0.095972	$0.09596 \pm 0.00029$	$k_{\text{eq}}$	0.010318	$0.01033 \pm 0.00011$
$A_{100}^{\text{PS}}$	256.5	$263 \pm 28$	$\sigma_8$	0.8151	$0.815 \pm 0.010$	$100\theta_{\text{eq}}$	0.8168	$0.8163 \pm 0.0067$
$A_{143}^{\text{PS}}$	38.7	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.4554 \pm 0.0069$	$100\theta_{\text{s,eq}}$	0.45130	$0.4510 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.6090 \pm 0.0071$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.07153 \pm 0.00054$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9918	$0.992 \pm 0.011$	$H(0.57)$	92.958	$92.93 \pm 0.31$
$A^{\text{kSZ}}$	0.00	$< 4.71$	$\langle d^2 \rangle^{1/2}$	2.4543	$2.455 \pm 0.027$	$D_A(0.57)$	1388.8	$1389.6 \pm 9.5$
$A_{100}^{\text{dust}TT}$	7.45	$7.5 \pm 1.9$	$z_{\text{re}}$	8.59	$8.4^{+1.9}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67607	$0.6763 \pm 0.0025$
$A_{143}^{\text{dust}TT}$	9.07	$9.0 \pm 1.8$	$10^9 A_s$	2.130	$2.127 \pm 0.066$	$f\sigma_8(0.57)$	0.4739	$0.4738 \pm 0.0054$
$A_{143 \times 217}^{\text{dust}TT}$	17.56	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8767	$1.879 \pm 0.012$	$\sigma_8(0.57)$	0.6063	$0.6057 \pm 0.0090$
$A_{217}^{\text{dust}TT}$	81.6	$81.7 \pm 7.4$	$D_{40}$	1229.5	$1233 \pm 12$	$f_{2000}^{143}$	29.84	$30.3 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0813 \pm 0.0057$	$D_{220}$	5720.7	$5726 \pm 39$	$f_{2000}^{143 \times 217}$	32.58	$32.8 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04890	$0.0489 \pm 0.0050$	$D_{810}$	2532.6	$2534 \pm 14$	$f_{2000}^{217}$	106.11	$106.3 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1002	$0.0995 \pm 0.032$	$D_{1420}$	814.36	$814.6 \pm 4.8$	$\chi_{\text{lensing}}^2$	9.76	$10.6 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1001	$0.1002 \pm 0.0069$	$D_{2000}$	229.96	$230.0 \pm 1.6$	$\chi_{\text{lowl}}^2$	13.71	$13.94 \pm 0.89$
$A_{143 \times 217}^{\text{dust}EE}$	0.2238	$0.224 \pm 0.047$	$n_{\text{s},0.002}$	0.9658	$0.9650 \pm 0.0051$	$\chi_{\text{plik}}^2$	2435.0	$2453.5 \pm 6.8$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245347	$0.245340 \pm 0.000075$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1409	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246674	$0.246667 \pm 0.000075$	$\chi_{\text{CMB}}^2$	2458.5	$2478.0 \pm 6.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1313	$0.132 \pm 0.029$	$10^5 D/H$	2.6108	$2.613 \pm 0.031$			
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	Age/Gyr	13.8062	$13.809 \pm 0.028$			

Best-fit  $\chi_{\text{eff}}^2 = 2465.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 2497.50$ ;  $R - 1 = 0.01483$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.76 commander\_rc2\_v1.1.l2.29\_B: 13.71 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.01

## 2.36 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022290	$0.02228 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.080$	$100\theta_*$	1.041088	$1.04108 \pm 0.00029$
$\Omega_c h^2$	0.11893	$0.1189 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.671	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	13.9055	$13.906 \pm 0.024$
$100\theta_{\text{MC}}$	1.040893	$1.04089 \pm 0.00030$	$c_{100}$	0.99815	$0.99815 \pm 0.00077$	$z_{\text{drag}}$	1059.666	$1059.66 \pm 0.30$
$\tau$	0.0660	$0.065 \pm 0.015$	$c_{217}$	0.99606	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	147.464	$147.47 \pm 0.25$
$\ln(10^{10} A_s)$	3.0639	$3.062 \pm 0.027$	$H_0$	67.65	$67.65 \pm 0.50$	$k_D$	0.140413	$0.14040 \pm 0.00029$
$n_s$	0.96659	$0.9661 \pm 0.0041$	$\Omega_\Lambda$	0.6901	$0.6899 \pm 0.0068$	$100\theta_D$	0.160900	$0.16091 \pm 0.00017$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0025$	$\Omega_m$	0.3099	$0.3101 \pm 0.0068$	$z_{\text{eq}}$	3374.8	$3375 \pm 25$
$A_{217}^{\text{CIB}}$	67.6	$64.6 \pm 6.6$	$\Omega_m h^2$	0.14187	$0.1419 \pm 0.0010$	$k_{\text{eq}}$	0.010300	$0.010300 \pm 0.000076$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^3$	0.095980	$0.09597 \pm 0.00029$	$100\theta_{\text{eq}}$	0.81798	$0.8180 \pm 0.0048$
$A_{143}^{\text{tSZ}}$	7.24	$5.3^{+2.2}_{-1.9}$	$\sigma_8$	0.8164	$0.8157 \pm 0.0099$	$100\theta_{s,\text{eq}}$	0.45189	$0.4519 \pm 0.0024$
$A_{100}^{\text{PS}}$	257.8	$262 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4545	$0.4542 \pm 0.0061$	$r_{\text{drag}}/D_V(0.57)$	0.071663	$0.07166 \pm 0.00038$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.6086 \pm 0.0071$	$H(0.57)$	93.009	$93.01 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	33.4	$39^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9926	$0.992 \pm 0.011$	$D_A(0.57)$	1387.1	$1387.2 \pm 6.8$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4560	$2.455 \pm 0.027$	$F_{\text{AP}}(0.57)$	0.67564	$0.6757 \pm 0.0017$
$A^{\text{kSZ}}$	0.00	$< 4.61$	$z_{\text{re}}$	8.84	$8.7^{+1.5}_{-1.3}$	$f\sigma_8(0.57)$	0.4743	$0.4739 \pm 0.0055$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s$	2.141	$2.139 \pm 0.058$	$\sigma_8(0.57)$	0.6077	$0.6072 \pm 0.0081$
$A_{143}^{\text{dust}TT}$	9.09	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8764	$1.877 \pm 0.011$	$f_{2000}^{143}$	29.71	$30.1 \pm 2.6$
$A_{143 \times 217}^{\text{dust}TT}$	17.63	$17.2 \pm 4.2$	$D_{40}$	1229.2	$1231 \pm 11$	$f_{2000}^{143 \times 217}$	32.46	$32.6 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.8	$81.7 \pm 7.4$	$D_{220}$	5724.1	$5728 \pm 38$	$f_{2000}^{217}$	105.97	$106.2 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0815 \pm 0.0056$	$D_{810}$	2533.6	$2534 \pm 14$	$\chi_{\text{lensing}}^2$	9.87	$10.6 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0491 \pm 0.0050$	$D_{1420}$	814.92	$814.7 \pm 4.8$	$\chi_{\text{lowl}}^2$	13.64	$13.82 \pm 0.82$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.0999 \pm 0.032$	$D_{2000}$	230.21	$230.1 \pm 1.6$	$\chi_{\text{plik}}^2$	2435.0	$2453.1 \pm 6.7$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1004 \pm 0.0070$	$n_{s,0.002}$	0.96659	$0.9661 \pm 0.0041$	$\chi_{6\text{DF}}^2$	0.0216	$0.054 \pm 0.069$
$A_{143 \times 217}^{\text{dust}EE}$	0.2254	$0.223 \pm 0.046$	$Y_P$	0.245358	$0.245354 \pm 0.000064$	$\chi_{\text{MGS}}^2$	1.279	$1.34 \pm 0.48$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246684	$0.246680 \pm 0.000065$	$\chi_{\text{DR11CMass}}^2$	2.451	$2.81 \pm 0.56$
$A_{100}^{\text{dust}TE}$	0.1404	$0.140 \pm 0.038$	$10^5 D/H$	2.6065	$2.608 \pm 0.027$	$\chi_{\text{DR11LOWZ}}^2$	0.608	$0.72 \pm 0.54$
$A_{100 \times 143}^{\text{dust}TE}$	0.1315	$0.131 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.8018	$13.803 \pm 0.022$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.303 \pm 0.085$	$z_*$	1089.927	$1089.94 \pm 0.24$	$\chi_{\text{CMB}}^2$	2458.5	$2477.4 \pm 6.4$
$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.053$	$r_*$	144.769	$144.77 \pm 0.25$	$\chi_{\text{BAO}}^2$	4.359	$4.92 \pm 0.82$

Best-fit  $\chi_{\text{eff}}^2 = 2469.97$ ;  $\bar{\chi}_{\text{eff}}^2 = 2501.88$ ;  $R - 1 = 0.01338$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.87 commander\_rc2.v1.1\_l2\_29\_B: 13.64 plik\_dx11dr2\_HM.v18\_TTTEEE: 2434.99

### 2.37 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022306	$0.02230 \pm 0.00014$	$A_{217}^{\text{dust}TE}$	1.671	$1.67 \pm 0.26$	$z_{\text{drag}}$	1059.704	$1059.69 \pm 0.30$
$\Omega_c h^2$	0.11866	$0.1187 \pm 0.0011$	$c_{100}$	0.99814	$0.99815 \pm 0.00077$	$r_{\text{drag}}$	147.518	$147.51 \pm 0.25$
$100\theta_{\text{MC}}$	1.040946	$1.04092 \pm 0.00030$	$c_{217}$	0.99606	$0.9960 \pm 0.0014$	$k_D$	0.140366	$0.14038 \pm 0.00029$
$\tau$	0.0683	$0.067 \pm 0.014$	$H_0$	67.783	$67.75 \pm 0.49$	$100\theta_D$	0.160895	$0.16089 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0677	$3.066 \pm 0.027$	$\Omega_\Lambda$	0.6918	$0.6913 \pm 0.0065$	$z_{\text{eq}}$	3368.6	$3370 \pm 24$
$n_s$	0.96720	$0.9667 \pm 0.0041$	$\Omega_m$	0.3082	$0.3087 \pm 0.0065$	$k_{\text{eq}}$	0.010281	$0.010285 \pm 0.000074$
$y_{\text{cal}}$	1.00006	$1.0002 \pm 0.0025$	$\Omega_m h^2$	0.14161	$0.1417 \pm 0.0010$	$100\theta_{\text{eq}}$	0.81920	$0.8189 \pm 0.0046$
$A_{217}^{\text{CIB}}$	68.0	$64.6 \pm 6.6$	$\Omega_m h^3$	0.095985	$0.09598 \pm 0.00029$	$100\theta_{s,\text{eq}}$	0.45251	$0.4524 \pm 0.0024$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8172	$0.8164 \pm 0.0099$	$r_{\text{drag}}/D_V(0.57)$	0.071761	$0.07174 \pm 0.00037$
$A_{143}^{\text{tSZ}}$	7.39	$5.3^{+2.2}_{-1.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.4535 \pm 0.0061$	$H(0.57)$	93.063	$93.05 \pm 0.22$
$A_{100}^{\text{PS}}$	256.3	$262 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.6085 \pm 0.0071$	$D_A(0.57)$	1385.4	$1385.8 \pm 6.6$
$A_{143}^{\text{PS}}$	38.1	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9926	$0.992 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67520	$0.6753 \pm 0.0017$
$A_{143 \times 217}^{\text{PS}}$	32.1	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4564	$2.456 \pm 0.027$	$f\sigma_8(0.57)$	0.4743	$0.4739 \pm 0.0055$
$A_{217}^{\text{PS}}$	96.0	$96 \pm 10$	$z_{\text{re}}$	9.04	$8.9^{+1.5}_{-1.2}$	$\sigma_8(0.57)$	0.6087	$0.6080 \pm 0.0080$
$A^{\text{kSZ}}$	0.00	$< 4.56$	$10^9 A_s$	2.149	$2.146 \pm 0.058$	$f_{2000}^{143}$	29.68	$30.0 \pm 2.6$
$A_{100}^{\text{dust}TT}$	7.45	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8749	$1.876 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.41	$32.5 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.03	$9.1 \pm 1.8$	$D_{40}$	1228.6	$1230 \pm 11$	$f_{2000}^{217}$	105.96	$106.1 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.61	$17.2 \pm 4.2$	$D_{220}$	5724.7	$5729 \pm 38$	$\chi_{\text{lensing}}^2$	9.80	$10.5 \pm 2.1$
$A_{217}^{\text{dust}TT}$	81.6	$81.7 \pm 7.4$	$D_{810}$	2532.9	$2533 \pm 14$	$\chi_{\text{lowl}}^2$	13.60	$13.76 \pm 0.82$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0816 \pm 0.0056$	$D_{1420}$	814.86	$814.8 \pm 4.8$	$\chi_{\text{plik}}^2$	2435.0	$2453.2 \pm 6.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04911	$0.0492 \pm 0.0050$	$D_{2000}$	230.24	$230.2 \pm 1.6$	$\chi_{\text{H070p6}}^2$	0.719	$0.75 \pm 0.25$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.100 \pm 0.032$	$n_{s,0.002}$	0.96720	$0.9667 \pm 0.0041$	$\chi_{\text{JLA}}^2$	706.662	$706.71 \pm 0.17$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1005 \pm 0.0070$	$Y_P$	0.245365	$0.245363 \pm 0.000064$	$\chi_{6\text{DF}}^2$	0.0102	$0.042 \pm 0.057$
$A_{143 \times 217}^{\text{dust}EE}$	0.2229	$0.223 \pm 0.046$	$Y_P^{\text{BBN}}$	0.246691	$0.246689 \pm 0.000064$	$\chi_{\text{MGS}}^2$	1.407	$1.44 \pm 0.48$
$A_{217}^{\text{dust}EE}$	0.647	$0.65 \pm 0.13$	$10^5 D/H$	2.6035	$2.604 \pm 0.027$	$\chi_{\text{DR11CMass}}^2$	2.410	$2.75 \pm 0.48$
$A_{100}^{\text{dust}TE}$	0.1406	$0.140 \pm 0.038$	Age/Gyr	13.7975	$13.799 \pm 0.022$	$\chi_{\text{DR11LOWZ}}^2$	0.483	$0.61 \pm 0.48$
$A_{100 \times 143}^{\text{dust}TE}$	0.1303	$0.131 \pm 0.029$	$z_*$	1089.882	$1089.89 \pm 0.24$	$\chi_{\text{prior}}^2$	7.3	$19.5 \pm 5.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.085$	$r_*$	144.829	$144.81 \pm 0.24$	$\chi_{\text{CMB}}^2$	2458.4	$2477.5 \pm 6.4$
$A_{143}^{\text{dust}TE}$	0.152	$0.154 \pm 0.053$	$100\theta_*$	1.041139	$1.04111 \pm 0.00029$	$\chi_{\text{BAO}}^2$	4.310	$4.84 \pm 0.71$
$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.338 \pm 0.080$	$D_A/\text{Gpc}$	13.9106	$13.910 \pm 0.023$			

Best-fit  $\chi_{\text{eff}}^2 = 3177.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 3209.31$ ;  $R - 1 = 0.01457$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.41 DR11LOWZ: 0.48 CMB - smica\_g30\_ftl\_full\_pp: 9.80 commander\_rc2\_v1.1\_l2\_29\_B: 13.60 plik\_dx11dr2\_HM\_v18\_TTTEEE:



**2.38 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_zre6p5**

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02228 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	$0.155 \pm 0.053$	$z_*$	$1089.96 \pm 0.30$
$\Omega_c h^2$	$0.1191 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	$0.339 \pm 0.080$	$r_*$	$144.75 \pm 0.31$
$100\theta_{\text{MC}}$	$1.04088 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.26$	$100\theta_*$	$1.04107 \pm 0.00031$
$\tau$	$0.066^{+0.011}_{-0.018}$	$c_{100}$	$0.99814 \pm 0.00077$	$D_A/\text{Gpc}$	$13.903 \pm 0.029$
$\ln(10^{10} A_s)$	$3.065^{+0.021}_{-0.032}$	$c_{217}$	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	$1059.65 \pm 0.31$
$n_s$	$0.9658 \pm 0.0048$	$H_0$	$67.59 \pm 0.66$	$r_{\text{drag}}$	$147.44 \pm 0.30$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	$0.6891 \pm 0.0089$	$k_D$	$0.14042 \pm 0.00032$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.5$	$\Omega_m$	$0.3109 \pm 0.0089$	$100\theta_D$	$0.16091 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1420 \pm 0.0014$	$z_{\text{eq}}$	$3378 \pm 32$
$A_{143}^{\text{tSZ}}$	$5.3^{+2.2}_{-1.9}$	$\Omega_m h^3$	$0.09597 \pm 0.00029$	$k_{\text{eq}}$	$0.010309 \pm 0.000099$
$A_{100}^{\text{PS}}$	$262 \pm 27$	$\sigma_8$	$0.8169^{+0.0077}_{-0.010}$	$100\theta_{\text{eq}}$	$0.8175 \pm 0.0062$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.4555 \pm 0.0070$	$100\theta_{s,\text{eq}}$	$0.4516 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	$0.6100 \pm 0.0068$	$r_{\text{drag}}/D_V(0.57)$	$0.07162 \pm 0.00049$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$\sigma_8/h^{0.5}$	$0.994 \pm 0.010$	$H(0.57)$	$92.99^{+0.28}_{-0.31}$
$A^{\text{kSZ}}$	$< 4.62$	$\langle d^2 \rangle^{1/2}$	$2.460 \pm 0.025$	$D_A(0.57)$	$1387.9 \pm 8.8$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$z_{\text{re}}$	$8.8^{+1.2}_{-1.6}$	$F_{\text{AP}}(0.57)$	$0.6759 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	$9.0 \pm 1.8$	$10^9 A_s$	$2.144^{+0.043}_{-0.070}$	$f\sigma_8(0.57)$	$0.4748 \pm 0.0050$
$A_{143 \times 217}^{\text{dust}TT}$	$17.2 \pm 4.2$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.012$	$\sigma_8(0.57)$	$0.6079^{+0.0061}_{-0.0092}$
$A_{217}^{\text{dust}TT}$	$81.7 \pm 7.4$	$D_{40}$	$1232 \pm 12$	$f_{2000}^{143}$	$30.1 \pm 2.6$
$A_{100}^{\text{dust}EE}$	$0.0815 \pm 0.0056$	$D_{220}$	$5726 \pm 39$	$f_{2000}^{143 \times 217}$	$32.6 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0491 \pm 0.0050$	$D_{810}$	$2533 \pm 14$	$f_{2000}^{217}$	$106.1 \pm 1.8$
$A_{100 \times 217}^{\text{dust}EE}$	$0.100 \pm 0.033$	$D_{1420}$	$814.5 \pm 4.8$	$\chi_{\text{lensing}}^2$	$10.8 \pm 2.2$
$A_{143}^{\text{dust}EE}$	$0.1003 \pm 0.0070$	$D_{2000}$	$230.0 \pm 1.6$	$\chi_{\text{lowl}}^2$	$13.91 \pm 0.89$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.046$	$n_{s,0.002}$	$0.9658 \pm 0.0048$	$\chi_{\text{plik}}^2$	$2453.0 \pm 6.7$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.245350 \pm 0.000072$	$\chi_{\text{prior}}^2$	$19.5 \pm 5.6$
$A_{100}^{\text{dust}TE}$	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246676 \pm 0.000072$	$\chi_{\text{CMB}}^2$	$2477.7 \pm 6.5$
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$10^5 D/H$	$2.609 \pm 0.030$		
$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	$\text{Age/Gyr}$	$13.804^{+0.028}_{-0.025}$		

 $\bar{\chi}_{\text{eff}}^2 = 2497.20; R - 1 = 0.01795$

### 2.39 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02229 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	$0.339 \pm 0.080$	$100\theta_*$	$1.04110 \pm 0.00029$
$\Omega_c h^2$	$0.1189 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	$13.907 \pm 0.023$
$100\theta_{\text{MC}}$	$1.04090 \pm 0.00029$	$c_{100}$	$0.99814 \pm 0.00077$	$z_{\text{drag}}$	$1059.67 \pm 0.30$
$\tau$	$0.067^{+0.012}_{-0.015}$	$c_{217}$	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	$147.48 \pm 0.25$
$\ln(10^{10} A_s)$	$3.066^{+0.022}_{-0.028}$	$H_0$	$67.69 \pm 0.49$	$k_D$	$0.14039 \pm 0.00029$
$n_s$	$0.9663 \pm 0.0040$	$\Omega_\Lambda$	$0.6904 \pm 0.0065$	$100\theta_D$	$0.16090 \pm 0.00017$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\Omega_m$	$0.3096 \pm 0.0065$	$z_{\text{eq}}$	$3373 \pm 24$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.6$	$\Omega_m h^2$	$0.1418 \pm 0.0010$	$k_{\text{eq}}$	$0.010295 \pm 0.000073$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09597 \pm 0.00029$	$100\theta_{\text{eq}}$	$0.8184 \pm 0.0046$
$A_{143}^{\text{tSZ}}$	$5.3^{+2.2}_{-1.9}$	$\sigma_8$	$0.8170^{+0.0082}_{-0.010}$	$100\theta_{s,\text{eq}}$	$0.4521 \pm 0.0023$
$A_{100}^{\text{PS}}$	$262 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	$0.4545 \pm 0.0060$	$r_{\text{drag}}/D_V(0.57)$	$0.07169 \pm 0.00036$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	$0.6094 \pm 0.0067$	$H(0.57)$	$93.02 \pm 0.22$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$\sigma_8/h^{0.5}$	$0.993^{+0.010}_{-0.011}$	$D_A(0.57)$	$1386.7 \pm 6.5$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$\langle d^2 \rangle^{1/2}$	$2.459 \pm 0.025$	$F_{\text{AP}}(0.57)$	$0.6755 \pm 0.0017$
$A^{\text{kSZ}}$	$< 4.60$	$z_{\text{re}}$	$8.9 \pm 1.2$	$f\sigma_8(0.57)$	$0.4745 \pm 0.0050$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$10^9 A_s$	$2.147^{+0.045}_{-0.062}$	$\sigma_8(0.57)$	$0.6082^{+0.0064}_{-0.0084}$
$A_{143}^{\text{dust}TT}$	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	$1.876 \pm 0.011$	$f_{2000}^{143}$	$30.0 \pm 2.6$
$A_{143 \times 217}^{\text{dust}TT}$	$17.2 \pm 4.2$	$D_{40}$	$1231 \pm 11$	$f_{2000}^{143 \times 217}$	$32.6 \pm 1.8$
$A_{217}^{\text{dust}TT}$	$81.6 \pm 7.4$	$D_{220}$	$5727 \pm 38$	$f_{2000}^{217}$	$106.1 \pm 1.8$
$A_{100}^{\text{dust}EE}$	$0.0816 \pm 0.0056$	$D_{810}$	$2533 \pm 14$	$\chi_{\text{lensing}}^2$	$10.6 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0491 \pm 0.0050$	$D_{1420}$	$814.6 \pm 4.8$	$\chi_{\text{lowl}}^2$	$13.83 \pm 0.82$
$A_{100 \times 217}^{\text{dust}EE}$	$0.100 \pm 0.032$	$D_{2000}$	$230.1 \pm 1.6$	$\chi_{\text{plik}}^2$	$2452.8 \pm 6.6$
$A_{143}^{\text{dust}EE}$	$0.1004 \pm 0.0070$	$n_{s,0.002}$	$0.9663 \pm 0.0040$	$\chi_{6\text{DF}}^2$	$0.047 \pm 0.060$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.046$	$Y_{\text{P}}$	$0.245357 \pm 0.000064$	$\chi_{\text{MGS}}^2$	$1.38 \pm 0.47$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	$0.246683 \pm 0.000064$	$\chi_{\text{DR11CMass}}^2$	$2.76 \pm 0.49$
$A_{100}^{\text{dust}TE}$	$0.140 \pm 0.038$	$10^5 D/H$	$2.606 \pm 0.027$	$\chi_{\text{DR11LOWZ}}^2$	$0.67 \pm 0.49$
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$\text{Age}/\text{Gyr}$	$13.801 \pm 0.022$	$\chi_{\text{prior}}^2$	$19.5 \pm 5.6$
$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	$z_*$	$1089.92 \pm 0.24$	$\chi_{\text{CMB}}^2$	$2477.3 \pm 6.4$
$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	$r_*$	$144.79 \pm 0.24$	$\chi_{\text{BAO}}^2$	$4.85 \pm 0.72$

$\bar{\chi}_{\text{eff}}^2 = 2501.68; R - 1 = 0.01627$

## 2.40 base\_plikHM\_TTTEEE\_lowl\_lensing\_post\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022210	$0.02221 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.155	$0.156 \pm 0.053$	$z_*$	1090.124	$1090.11 \pm 0.26$
$\Omega_c h^2$	0.12002	$0.1199 \pm 0.0012$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.340 \pm 0.079$	$r_*$	144.548	$144.58 \pm 0.27$
$100\theta_{\text{MC}}$	1.040754	$1.04077 \pm 0.00030$	$A_{217}^{\text{dust}TE}$	1.671	$1.68 \pm 0.26$	$100\theta_*$	1.040960	$1.04097 \pm 0.00030$
$\tau$	0.0512	$0.0538^{+0.0049}_{-0.0093}$	$c_{100}$	0.99817	$0.99815 \pm 0.00078$	$D_A/\text{Gpc}$	13.8861	$13.889 \pm 0.025$
$\ln(10^{10} A_s)$	3.0376	$3.043^{+0.012}_{-0.016}$	$c_{217}$	0.99612	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.551	$1059.56 \pm 0.30$
$n_s$	0.96330	$0.9633 \pm 0.0041$	$H_0$	67.16	$67.21 \pm 0.54$	$r_{\text{drag}}$	147.266	$147.29 \pm 0.27$
$y_{\text{cal}}$	1.00025	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6832	$0.6838 \pm 0.0075$	$k_D$	0.140560	$0.14053 \pm 0.00030$
$A_{217}^{\text{CIB}}$	68.2	$65.0 \pm 6.5$	$\Omega_m$	0.3168	$0.3162 \pm 0.0075$	$100\theta_D$	0.160957	$0.16096 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14288	$0.1428 \pm 0.0011$	$z_{\text{eq}}$	3398.9	$3396 \pm 27$
$A_{143}^{\text{tSZ}}$	7.27	$5.2^{+2.2}_{-1.9}$	$\Omega_m h^3$	0.095956	$0.09594 \pm 0.00029$	$k_{\text{eq}}$	0.010374	$0.010366 \pm 0.000083$
$A_{100}^{\text{PS}}$	258.8	$263 \pm 27$	$\sigma_8$	0.8086	$0.8102 \pm 0.0058$	$100\theta_{\text{eq}}$	0.8133	$0.8138 \pm 0.0051$
$A_{143}^{\text{PS}}$	39.8	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.4555 \pm 0.0071$	$100\theta_{\text{s,eq}}$	0.44951	$0.4498 \pm 0.0026$
$A_{143 \times 217}^{\text{PS}}$	33.2	$39^{+9}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6066	$0.6075 \pm 0.0064$	$r_{\text{drag}}/D_V(0.57)$	0.071289	$0.07133 \pm 0.00040$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9866	$0.9883 \pm 0.0090$	$H(0.57)$	92.807	$92.83 \pm 0.24$
$A^{\text{kSZ}}$	0.01	$< 4.87$	$\langle d^2 \rangle^{1/2}$	2.4419	$2.447 \pm 0.022$	$D_A(0.57)$	1393.7	$1393.1 \pm 7.3$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$z_{\text{re}}$	7.40	$7.65^{+0.47}_{-0.97}$	$F_{\text{AP}}(0.57)$	0.67736	$0.6772 \pm 0.0019$
$A_{143}^{\text{dust}TT}$	9.06	$9.0 \pm 1.8$	$10^9 A_s$	2.0855	$2.096^{+0.024}_{-0.034}$	$f\sigma_8(0.57)$	0.47141	$0.4722 \pm 0.0043$
$A_{143 \times 217}^{\text{dust}TT}$	17.83	$17.3 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8824	$1.882 \pm 0.011$	$\sigma_8(0.57)$	0.60024	$0.6016^{+0.0037}_{-0.0048}$
$A_{217}^{\text{dust}TT}$	82.1	$81.7 \pm 7.3$	$D_{40}$	1232.8	$1234 \pm 12$	$f_{2000}^{143}$	30.36	$30.7 \pm 2.6$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0813 \pm 0.0055$	$D_{220}$	5726.4	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	33.00	$33.1 \pm 1.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.04872	$0.0488 \pm 0.0050$	$D_{810}$	2536.6	$2536 \pm 13$	$f_{2000}^{217}$	106.49	$106.6 \pm 1.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.100 \pm 0.033$	$D_{1420}$	814.96	$814.7 \pm 4.8$	$\chi_{\text{lensing}}^2$	9.20	$9.9 \pm 1.3$
$A_{143}^{\text{dust}EE}$	0.1001	$0.09999 \pm 0.0069$	$D_{2000}$	229.81	$229.8 \pm 1.6$	$\chi_{\text{lowl}}^2$	13.81	$13.96 \pm 0.90$
$A_{143 \times 217}^{\text{dust}EE}$	0.2228	$0.223 \pm 0.046$	$n_{\text{s},0.002}$	0.96330	$0.9633 \pm 0.0041$	$\chi_{\text{plik}}^2$	2436.1	$2453.7 \pm 6.5$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245322	$0.245320 \pm 0.000067$	$\chi_{\text{prior}}^2$	7.1	$20 \pm 6$
$A_{100}^{\text{dust}TE}$	0.1413	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246648	$0.246647 \pm 0.000067$	$\chi_{\text{CMB}}^2$	2459.1	$2477.6 \pm 6.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132 \pm 0.028$	$10^5 D/H$	2.6217	$2.621 \pm 0.028$			
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.304 \pm 0.086$	Age/Gyr	13.8186	$13.817 \pm 0.023$			

Best-fit  $\chi_{\text{eff}}^2 = 2466.21$ ;  $\bar{\chi}_{\text{eff}}^2 = 2497.92$ ;  $R - 1 = 0.02919$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.20 commander\_rc2\_v1.1.l2.29\_B: 13.80 plik\_dx11dr2\_HM\_v18.TTTEEE: 2436.06

## 2.41 base\_plikHM\_TT\_lowl\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022112	$0.02212 \pm 0.00022$	$\Omega_m$	0.3228	$0.322 \pm 0.013$	$100\theta_*$	1.040894	$1.04094 \pm 0.00045$
$\Omega_c h^2$	0.12097	$0.1208 \pm 0.0021$	$\Omega_m h^2$	0.14373	$0.1436 \pm 0.0020$	$D_A/\text{Gpc}$	13.8706	$13.874 \pm 0.044$
$100\theta_{\text{MC}}$	1.040685	$1.04073 \pm 0.00046$	$\Omega_m h^3$	0.095903	$0.09591 \pm 0.00046$	$z_{\text{drag}}$	1059.399	$1059.41 \pm 0.45$
$\tau$	0.0516	$0.0548^{+0.0054}_{-0.011}$	$\sigma_8$	0.8126	$0.8145 \pm 0.0091$	$r_{\text{drag}}$	147.124	$147.16 \pm 0.48$
$\ln(10^{10} A_s)$	3.0403	$3.046^{+0.013}_{-0.020}$	$\sigma_8 \Omega_m^{0.5}$	0.4617	$0.462 \pm 0.013$	$k_D$	0.14063	$0.14060 \pm 0.00052$
$n_s$	0.9618	$0.9620 \pm 0.0055$	$\sigma_8 \Omega_m^{0.25}$	0.6125	$0.613 \pm 0.012$	$100\theta_D$	0.161052	$0.16106 \pm 0.00026$
$y_{\text{cal}}$	1.00037	$1.0005 \pm 0.0025$	$\sigma_8/h^{0.5}$	0.9948	$0.997 \pm 0.016$	$z_{\text{eq}}$	3419.2	$3416 \pm 47$
$A_{217}^{\text{CIB}}$	67.9	$64.9 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.4583	$2.464 \pm 0.038$	$k_{\text{eq}}$	0.010436	$0.01042 \pm 0.00014$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	7.47	$7.78^{+0.46}_{-1.1}$	$100\theta_{\text{eq}}$	0.8094	$0.8102 \pm 0.0088$
$A_{143}^{\text{tSZ}}$	7.12	$4.9 \pm 2.0$	$10^9 A_s$	2.0911	$2.104^{+0.028}_{-0.042}$	$100\theta_{s,\text{eq}}$	0.44753	$0.4479 \pm 0.0045$
$A_{100}^{\text{PS}}$	255.9	$263 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8862	$1.886 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07097	$0.07105 \pm 0.00069$
$A_{143}^{\text{PS}}$	41.1	$46 \pm 8$	$D_{40}$	1235.5	$1237 \pm 15$	$H(0.57)$	92.625	$92.67 \pm 0.38$
$A_{143 \times 217}^{\text{PS}}$	34.0	$39^{+10}_{-10}$	$D_{220}$	5714.2	$5716 \pm 42$	$D_A(0.57)$	1399.5	$1398 \pm 12$
$A_{217}^{\text{PS}}$	97.9	$97 \pm 10$	$D_{810}$	2537.1	$2536 \pm 14$	$F_{\text{AP}}(0.57)$	0.67887	$0.6786 \pm 0.0032$
$A^{\text{kSZ}}$	0.00	$< 5.12$	$D_{1420}$	814.5	$814.2 \pm 5.1$	$f\sigma_8(0.57)$	0.4752	$0.4761 \pm 0.0077$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$D_{2000}$	229.62	$229.6 \pm 1.8$	$\sigma_8(0.57)$	0.6018	$0.6035^{+0.0046}_{-0.0061}$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.8$	$n_{s,0.002}$	0.9618	$0.9620 \pm 0.0055$	$f_{2000}^{143}$	30.77	$31.2 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.81	$17.3 \pm 4.2$	$Y_{\text{P}}$	0.245274	$0.24528 \pm 0.00010$	$f_{2000}^{143 \times 217}$	33.29	$33.4 \pm 2.0$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.5$	$Y_{\text{P}}^{\text{BBN}}$	0.246600	$0.24660 \pm 0.00010$	$f_{2000}^{217}$	106.83	$106.9 \pm 1.9$
$c_{100}$	0.99793	$0.99789 \pm 0.00078$	$10^5 D/H$	2.6402	$2.639 \pm 0.042$	$\chi_{\text{lowl}}^2$	14.10	$14.3 \pm 1.3$
$c_{217}$	0.99602	$0.9961 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.8345	$13.831 \pm 0.036$	$\chi_{\text{plik}}^2$	766.0	$779.2 \pm 5.5$
$H_0$	66.73	$66.81 \pm 0.91$	$z_*$	1090.333	$1090.31 \pm 0.40$	$\chi_{\text{prior}}^2$	2.25	$8.6 \pm 4.0$
$\Omega_\Lambda$	0.6772	$0.678 \pm 0.013$	$r_*$	144.378	$144.42 \pm 0.48$	$\chi_{\text{CMB}}^2$	780.1	$793.5 \pm 5.4$

Best-fit  $\chi_{\text{eff}}^2 = 782.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 802.10$ ;  $R - 1 = 0.00778$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2\_v1.1\_l2\_29\_B: 14.10 plik\_dx11dr2\_HM\_v18\_TT: 765.95

## 2.42 base\_plikHM\_TT\_lowl\_reion\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022214	$0.02220 \pm 0.00020$	$\Omega_m h^3$	0.095929	$0.09590 \pm 0.00046$	$k_D$	0.140393	$0.14036 \pm 0.00045$
$\Omega_c h^2$	0.11939	$0.1194 \pm 0.0013$	$\sigma_8$	0.8091	$0.8105^{+0.0076}_{-0.0086}$	$100\theta_D$	0.160993	$0.16102 \pm 0.00026$
$100\theta_{MC}$	1.040917	$1.04091 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.4534 \pm 0.0084$	$z_{eq}$	3383.8	$3383 \pm 29$
$\tau$	0.0544	$0.0561^{+0.0060}_{-0.011}$	$\sigma_8 \Omega_m^{0.25}$	0.6051	$0.6062 \pm 0.0082$	$k_{eq}$	0.010328	$0.010327 \pm 0.000089$
$\ln(10^{10} A_s)$	3.0423	$3.046^{+0.014}_{-0.021}$	$\sigma_8/h^{0.5}$	0.9853	$0.987 \pm 0.012$	$100\theta_{eq}$	0.8162	$0.8162 \pm 0.0054$
$n_s$	0.96544	$0.9651 \pm 0.0042$	$\langle d^2 \rangle^{1/2}$	2.4367	$2.442 \pm 0.029$	$100\theta_{s,eq}$	0.45099	$0.4510 \pm 0.0028$
$y_{cal}$	1.00040	$1.0006 \pm 0.0025$	$z_{re}$	7.71	$7.87^{+0.62}_{-1.1}$	$r_{drag}/D_V(0.57)$	0.071520	$0.07152 \pm 0.00042$
$A_{217}^{CIB}$	67.8	$64.8 \pm 6.7$	$10^9 A_s$	2.0953	$2.103^{+0.029}_{-0.044}$	$H(0.57)$	92.911	$92.90 \pm 0.26$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8794	$1.880 \pm 0.012$	$D_A(0.57)$	1390.0	$1390.3 \pm 7.5$
$A_{143}^{tSZ}$	7.13	$4.9 \pm 2.0$	$D_{40}$	1228.2	$1230 \pm 13$	$F_{AP}(0.57)$	0.67635	$0.6764 \pm 0.0019$
$A_{100}^{PS}$	256.4	$262 \pm 28$	$D_{220}$	5721.5	$5723 \pm 40$	$f\sigma_8(0.57)$	0.4708	$0.4716 \pm 0.0057$
$A_{143}^{PS}$	40.5	$45 \pm 8$	$D_{810}$	2536.0	$2536 \pm 14$	$\sigma_8(0.57)$	0.6016	$0.6026^{+0.0046}_{-0.0063}$
$A_{143 \times 217}^{PS}$	33.5	$39^{+9}_{-10}$	$D_{1420}$	815.3	$815.0 \pm 5.0$	$f_{2000}^{143}$	30.52	$31.0 \pm 2.8$
$A_{217}^{PS}$	97.5	$96 \pm 10$	$D_{2000}$	229.99	$229.9 \pm 1.7$	$f_{2000}^{143 \times 217}$	33.01	$33.2 \pm 2.0$
$A^{kSZ}$	0.00	$< 5.14$	$n_{s,0.002}$	0.96544	$0.9651 \pm 0.0042$	$f_{2000}^{217}$	106.56	$106.7 \pm 1.9$
$A_{100}^{dustTT}$	7.40	$7.5 \pm 1.9$	$Y_P$	0.245324	$0.245314 \pm 0.000090$	$\chi_{lowl}^2$	13.42	$13.63 \pm 0.96$
$A_{143}^{dustTT}$	9.03	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246650	$0.246641 \pm 0.000090$	$\chi_{plik}^2$	767.0	$779.7 \pm 5.5$
$A_{143 \times 217}^{dustTT}$	17.81	$17.2 \pm 4.2$	$10^5 D/H$	2.6208	$2.624 \pm 0.038$	$\chi_{6DF}^2$	0.0469	$0.09 \pm 0.10$
$A_{217}^{dustTT}$	82.0	$81.7 \pm 7.5$	Age/Gyr	13.8108	$13.812 \pm 0.028$	$\chi_{MGS}^2$	1.10	$1.17 \pm 0.50$
$c_{100}$	0.99794	$0.99790 \pm 0.00078$	$z_*$	1090.064	$1090.08 \pm 0.30$	$\chi_{DR11CMass}^2$	2.590	$3.03 \pm 0.84$
$c_{217}$	0.99600	$0.9960 \pm 0.0015$	$r_*$	144.709	$144.72 \pm 0.32$	$\chi_{DR11LOWZ}^2$	0.82	$0.96 \pm 0.68$
$H_0$	67.44	$67.43 \pm 0.55$	$100\theta_*$	1.041115	$1.04111 \pm 0.00041$	$\chi_{prior}^2$	2.50	$8.8 \pm 4.1$
$\Omega_\Lambda$	0.6872	$0.6871 \pm 0.0075$	$D_A/\text{Gpc}$	13.8994	$13.901 \pm 0.032$	$\chi_{BAO}^2$	4.55	$5.2 \pm 1.2$
$\Omega_m$	0.3128	$0.3129 \pm 0.0075$	$z_{drag}$	1059.513	$1059.49 \pm 0.44$	$\chi_{CMB}^2$	780.4	$793.3 \pm 5.4$
$\Omega_m h^2$	0.14225	$0.1422 \pm 0.0012$	$r_{drag}$	147.429	$147.45 \pm 0.35$			

Best-fit  $\chi_{eff}^2 = 787.47$ ;  $\bar{\chi}_{eff}^2 = 807.37$ ;  $R - 1 = 0.01084$

$\chi_{eff}^2$ : BAO - 6DF: 0.05 MGS: 1.10 DR11CMass: 2.59 DR11LOWZ: 0.82 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 13.42 plik\_dx11dr2\_HM\_v18\_TT: 767.00

## 2.43 base\_plikHM\_TT\_lowl\_reion\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022235	$0.02222 \pm 0.00020$	$\sigma_8$	0.8086	$0.8097^{+0.0075}_{-0.0088}$	$z_{\text{eq}}$	3377.9	$3377 \pm 28$
$\Omega_c h^2$	0.11912	$0.1191 \pm 0.0012$	$\sigma_8 \Omega_m^{0.5}$	0.4510	$0.4515 \pm 0.0082$	$k_{\text{eq}}$	0.010310	$0.010307 \pm 0.000087$
$100\theta_{\text{MC}}$	1.040979	$1.04095 \pm 0.00041$	$\sigma_8 \Omega_m^{0.25}$	0.6039	$0.6046 \pm 0.0081$	$100\theta_{\text{eq}}$	0.8173	$0.8175 \pm 0.0052$
$\tau$	0.0548	$0.0565^{+0.0061}_{-0.011}$	$\sigma_8/h^{0.5}$	0.9837	$0.985 \pm 0.012$	$100\theta_{\text{s,eq}}$	0.45159	$0.4517 \pm 0.0027$
$\ln(10^{10} A_s)$	3.0430	$3.046^{+0.015}_{-0.021}$	$\langle d^2 \rangle^{1/2}$	2.4334	$2.437 \pm 0.028$	$r_{\text{drag}}/D_V(0.57)$	0.071618	$0.07162 \pm 0.00040$
$n_s$	0.96602	$0.9658 \pm 0.0042$	$z_{\text{re}}$	7.75	$7.90^{+0.63}_{-1.1}$	$H(0.57)$	92.969	$92.96 \pm 0.26$
$y_{\text{cal}}$	1.00059	$1.0006 \pm 0.0025$	$10^9 A_s$	2.0967	$2.103^{+0.030}_{-0.044}$	$D_A(0.57)$	1388.3	$1388.4 \pm 7.3$
$A_{217}^{\text{CIB}}$	67.9	$64.8 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8790	$1.878 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67590	$0.6759 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1227.6	$1229 \pm 13$	$f\sigma_8(0.57)$	0.4700	$0.4706 \pm 0.0057$
$A_{143}^{\text{tSZ}}$	7.14	$4.9 \pm 2.0$	$D_{220}$	5725.6	$5725 \pm 40$	$\sigma_8(0.57)$	0.6017	$0.6024^{+0.0047}_{-0.0064}$
$A_{100}^{\text{PS}}$	256.3	$262 \pm 28$	$D_{810}$	2536.9	$2536 \pm 14$	$f_{2000}^{143}$	30.53	$30.9 \pm 2.7$
$A_{143}^{\text{PS}}$	40.5	$45 \pm 8$	$D_{1420}$	815.8	$815.2 \pm 5.0$	$f_{2000}^{143 \times 217}$	33.01	$33.1 \pm 2.0$
$A_{143 \times 217}^{\text{PS}}$	33.4	$39^{+9}_{-10}$	$D_{2000}$	230.15	$230.0 \pm 1.7$	$f_{2000}^{217}$	106.56	$106.6 \pm 1.9$
$A_{217}^{\text{PS}}$	97.3	$96 \pm 10$	$n_{\text{s},0.002}$	0.96602	$0.9658 \pm 0.0042$	$\chi_{\text{lowl}}^2$	13.33	$13.50 \pm 0.93$
$A^{\text{kSZ}}$	0.01	$< 5.12$	$Y_{\text{P}}$	0.245333	$0.245326 \pm 0.000089$	$\chi_{\text{plik}}^2$	767.2	$780.0 \pm 5.6$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246660	$0.246652 \pm 0.000090$	$\chi_{\text{H070p6}}^2$	0.829	$0.86 \pm 0.29$
$A_{143}^{\text{dustTT}}$	9.04	$9.1 \pm 1.8$	$10^5 D/H$	2.6169	$2.619 \pm 0.037$	$\chi_{\text{JLA}}^2$	706.734	$706.78 \pm 0.22$
$A_{143 \times 217}^{\text{dustTT}}$	17.79	$17.2 \pm 4.2$	$\text{Age/Gyr}$	13.8058	$13.807 \pm 0.028$	$\chi_{6\text{DF}}^2$	0.0290	$0.064 \pm 0.081$
$A_{217}^{\text{dustTT}}$	82.1	$81.6 \pm 7.5$	$z_*$	1090.014	$1090.03 \pm 0.29$	$\chi_{\text{MGS}}^2$	1.22	$1.29 \pm 0.51$
$c_{100}$	0.99794	$0.99790 \pm 0.00078$	$r_*$	144.763	$144.78 \pm 0.32$	$\chi_{\text{DR11CMass}}^2$	2.479	$2.88 \pm 0.67$
$c_{217}$	0.99604	$0.9960 \pm 0.0015$	$100\theta_*$	1.041172	$1.04115 \pm 0.00041$	$\chi_{\text{DR11LOWZ}}^2$	0.673	$0.79 \pm 0.60$
$H_0$	67.57	$67.57 \pm 0.53$	$D_A/\text{Gpc}$	13.9039	$13.906 \pm 0.031$	$\chi_{\text{prior}}^2$	2.63	$8.9 \pm 4.1$
$\Omega_\Lambda$	0.6890	$0.6890 \pm 0.0072$	$z_{\text{drag}}$	1059.551	$1059.53 \pm 0.44$	$\chi_{\text{BAO}}^2$	4.40	$5.03 \pm 0.98$
$\Omega_m$	0.3110	$0.3110 \pm 0.0072$	$r_{\text{drag}}$	147.477	$147.50 \pm 0.35$	$\chi_{\text{CMB}}^2$	780.5	$793.5 \pm 5.4$
$\Omega_m h^2$	0.14200	$0.1420 \pm 0.0012$	$k_{\text{D}}$	0.140358	$0.14033 \pm 0.00045$			
$\Omega_m h^3$	0.095948	$0.09591 \pm 0.00046$	$100\theta_{\text{D}}$	0.160982	$0.16100 \pm 0.00026$			

Best-fit  $\chi_{\text{eff}}^2 = 1495.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 1515.03$ ;  $R - 1 = 0.01183$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 1.22 DR11CMass: 2.48 DR11LOWZ: 0.67 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 13.33 plik\_dx11dr2\_HM\_v18\_TT: 767.21 Hubble - H070p6: 0.83 SN - JLA December\_2013: 706.73

## 2.44 base\_plikHM\_TTTEEE\_lowl\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022179	$0.02218 \pm 0.00015$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.302 \pm 0.084$	$10^5 \text{D/H}$	2.6274	$2.628 \pm 0.029$
$\Omega_c h^2$	0.12068	$0.1206 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	Age/Gyr	13.8268	$13.826 \pm 0.025$
$100\theta_{\text{MC}}$	1.040676	$1.04068 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.341	$0.340 \pm 0.080$	$z_*$	1090.222	$1090.21 \pm 0.28$
$\tau$	0.0544	$0.0562^{+0.0063}_{-0.010}$	$A_{217}^{\text{dust}TE}$	1.688	$1.68 \pm 0.25$	$r_*$	144.401	$144.42 \pm 0.31$
$\ln(10^{10} A_s)$	3.0460	$3.050^{+0.014}_{-0.020}$	$c_{100}$	0.99816	$0.99817 \pm 0.00078$	$100\theta_*$	1.040879	$1.04089 \pm 0.00031$
$n_s$	0.96179	$0.9617 \pm 0.0045$	$c_{217}$	0.99613	$0.9961 \pm 0.0014$	$D_A/\text{Gpc}$	13.8730	$13.875 \pm 0.028$
$y_{\text{cal}}$	1.00040	$1.0007 \pm 0.0025$	$H_0$	66.88	$66.91 \pm 0.61$	$z_{\text{drag}}$	1059.551	$1059.54 \pm 0.30$
$A_{217}^{\text{CIB}}$	68.1	$64.8 \pm 6.5$	$\Omega_\Lambda$	0.6791	$0.6795 \pm 0.0087$	$r_{\text{drag}}$	147.123	$147.15 \pm 0.30$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.3209	$0.3205 \pm 0.0087$	$k_D$	0.140686	$0.14066 \pm 0.00032$
$A_{143}^{\text{tSZ}}$	7.20	$5.2 \pm 1.9$	$\Omega_m h^2$	0.14351	$0.1434 \pm 0.0013$	$100\theta_D$	0.160965	$0.16097 \pm 0.00018$
$A_{100}^{\text{PS}}$	259.2	$264 \pm 28$	$\Omega_m h^3$	0.095974	$0.09596 \pm 0.00029$	$z_{\text{eq}}$	3414.0	$3412 \pm 31$
$A_{143}^{\text{PS}}$	40.1	$45 \pm 8$	$\sigma_8$	0.8137	$0.8149^{+0.0073}_{-0.0083}$	$k_{\text{eq}}$	0.010420	$0.010413 \pm 0.000095$
$A_{143 \times 217}^{\text{PS}}$	33.5	$40^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4609	$0.4613 \pm 0.0090$	$100\theta_{\text{eq}}$	0.8105	$0.8109 \pm 0.0059$
$A_{217}^{\text{PS}}$	97.1	$97 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6124	$0.6131 \pm 0.0084$	$100\theta_{\text{s,eq}}$	0.44805	$0.4483 \pm 0.0030$
$A^{\text{kSZ}}$	0.00	$< 4.55$	$\sigma_8/h^{0.5}$	0.9950	$0.996 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.071066	$0.07110 \pm 0.00046$
$A_{100}^{\text{dust}TT}$	7.46	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.4622	$2.466 \pm 0.029$	$H(0.57)$	92.700	$92.71 \pm 0.26$
$A_{143}^{\text{dust}TT}$	9.04	$9.0 \pm 1.8$	$z_{\text{re}}$	7.74	$7.90^{+0.67}_{-1.0}$	$D_A(0.57)$	1397.4	$1397.0 \pm 8.3$
$A_{143 \times 217}^{\text{dust}TT}$	17.67	$17.2 \pm 4.2$	$10^9 A_s$	2.1030	$2.112^{+0.028}_{-0.042}$	$F_{\text{AP}}(0.57)$	0.67839	$0.6783 \pm 0.0022$
$A_{217}^{\text{dust}TT}$	82.0	$81.8 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8862	$1.887 \pm 0.012$	$f\sigma_8(0.57)$	0.4754	$0.4760 \pm 0.0057$
$A_{100}^{\text{dust}EE}$	0.0809	$0.0809 \pm 0.0057$	$D_{40}$	1237.9	$1240 \pm 13$	$\sigma_8(0.57)$	0.6031	$0.6041^{+0.0044}_{-0.0060}$
$A_{100 \times 143}^{\text{dust}EE}$	0.0484	$0.0484 \pm 0.0050$	$D_{220}$	5727.3	$5732 \pm 39$	$f_{2000}^{143}$	30.43	$30.6 \pm 2.6$
$A_{100 \times 217}^{\text{dust}EE}$	0.0989	$0.0996 \pm 0.033$	$D_{810}$	2537.9	$2539 \pm 13$	$f_{2000}^{143 \times 217}$	33.07	$33.1 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.09998	$0.0998 \pm 0.0069$	$D_{1420}$	814.86	$815.0 \pm 4.8$	$f_{2000}^{217}$	106.61	$106.6 \pm 1.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2245	$0.224 \pm 0.047$	$D_{2000}$	229.84	$229.9 \pm 1.6$	$\chi_{\text{lowl}}^2$	14.28	$14.5 \pm 1.1$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.96179	$0.9617 \pm 0.0045$	$\chi_{\text{plik}}^2$	2434.8	$2453.2 \pm 6.6$
$A_{100}^{\text{dust}TE}$	0.1404	$0.142 \pm 0.038$	$Y_{\text{P}}$	0.245307	$0.245306 \pm 0.000069$	$\chi_{\text{prior}}^2$	7.5	$21 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1315	$0.132 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.246633	$0.246632 \pm 0.000070$	$\chi_{\text{CMB}}^2$	2449.1	$2467.6 \pm 6.6$

Best-fit  $\chi_{\text{eff}}^2 = 2456.59$ ;  $\bar{\chi}_{\text{eff}}^2 = 2488.39$ ;  $R - 1 = 0.00812$

$\chi_{\text{eff}}^2$ : CMB - commander\_rc2\_v1.1\_l2\_29\_B: 14.28 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.81

## 2.45 base\_plikHM\_TTTEEE\_lowl\_reion\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022253	$0.02224 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.336 \pm 0.080$	$100\theta_*$	1.041000	$1.04099 \pm 0.00030$
$\Omega_c h^2$	0.11965	$0.1197 \pm 0.0010$	$A_{217}^{\text{dust}TE}$	1.672	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8916	$13.892 \pm 0.023$
$100\theta_{\text{MC}}$	1.040809	$1.04079 \pm 0.00030$	$c_{100}$	0.99818	$0.99817 \pm 0.00078$	$z_{\text{drag}}$	1059.628	$1059.61 \pm 0.29$
$\tau$	0.0563	$0.0574^{+0.0067}_{-0.010}$	$c_{217}$	0.99612	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	147.316	$147.32 \pm 0.25$
$\ln(10^{10} A_s)$	3.0477	$3.050^{+0.015}_{-0.020}$	$H_0$	67.341	$67.32 \pm 0.46$	$k_D$	0.140541	$0.14053 \pm 0.00029$
$n_s$	0.96421	$0.9639 \pm 0.0039$	$\Omega_\Lambda$	0.6857	$0.6853 \pm 0.0064$	$100\theta_D$	0.160914	$0.16093 \pm 0.00017$
$y_{\text{cal}}$	1.00049	$1.0007 \pm 0.0025$	$\Omega_m$	0.3143	$0.3147 \pm 0.0064$	$z_{\text{eq}}$	3391.0	$3392 \pm 24$
$A_{217}^{\text{CIB}}$	67.7	$64.7 \pm 6.5$	$\Omega_m h^2$	0.14255	$0.14257 \pm 0.00098$	$k_{\text{eq}}$	0.010350	$0.010352 \pm 0.000072$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^3$	0.095993	$0.09597 \pm 0.00029$	$100\theta_{\text{eq}}$	0.81489	$0.8148 \pm 0.0044$
$A_{143}^{\text{tSZ}}$	7.21	$5.3 \pm 1.9$	$\sigma_8$	0.8116	$0.8126^{+0.0070}_{-0.0083}$	$100\theta_{s,\text{eq}}$	0.45030	$0.4502 \pm 0.0023$
$A_{100}^{\text{PS}}$	258.4	$262 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.4559 \pm 0.0072$	$r_{\text{drag}}/D_V(0.57)$	0.071418	$0.07140 \pm 0.00035$
$A_{143}^{\text{PS}}$	39.8	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.6086 \pm 0.0072$	$H(0.57)$	92.887	$92.87 \pm 0.21$
$A_{143 \times 217}^{\text{PS}}$	33.8	$40 \pm 10$	$\sigma_8/h^{0.5}$	0.9890	$0.990 \pm 0.011$	$D_A(0.57)$	1391.2	$1391.6 \pm 6.3$
$A_{217}^{\text{PS}}$	97.2	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4484	$2.453 \pm 0.026$	$F_{\text{AP}}(0.57)$	0.67675	$0.6768 \pm 0.0016$
$A^{\text{kSZ}}$	0.00	$< 4.51$	$z_{\text{re}}$	7.91	$8.00^{+0.72}_{-1.0}$	$f\sigma_8(0.57)$	0.4726	$0.4733 \pm 0.0051$
$A_{100}^{\text{dust}TT}$	7.51	$7.5 \pm 1.9$	$10^9 A_s$	2.1067	$2.112^{+0.031}_{-0.043}$	$\sigma_8(0.57)$	0.6030	$0.6038^{+0.0047}_{-0.0062}$
$A_{143}^{\text{dust}TT}$	9.07	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8822	$1.883 \pm 0.011$	$f_{2000}^{143}$	30.01	$30.3 \pm 2.6$
$A_{143 \times 217}^{\text{dust}TT}$	17.83	$17.2 \pm 4.1$	$D_{40}$	1233.3	$1235 \pm 12$	$f_{2000}^{143 \times 217}$	32.74	$32.9 \pm 1.8$
$A_{217}^{\text{dust}TT}$	82.3	$81.8 \pm 7.3$	$D_{220}$	5733.5	$5736 \pm 38$	$f_{2000}^{217}$	106.34	$106.5 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0812	$0.0813 \pm 0.0057$	$D_{810}$	2537.8	$2538 \pm 13$	$\chi_{\text{lowl}}^2$	13.82	$14.00 \pm 0.94$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0488 \pm 0.0051$	$D_{1420}$	815.62	$815.6 \pm 4.7$	$\chi_{\text{plik}}^2$	2435.4	$2453.4 \pm 6.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.100 \pm 0.032$	$D_{2000}$	230.16	$230.1 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.069	$0.099 \pm 0.095$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1001 \pm 0.0069$	$n_{s,0.002}$	0.96421	$0.9639 \pm 0.0039$	$\chi_{\text{MGS}}^2$	0.982	$1.03 \pm 0.40$
$A_{143 \times 217}^{\text{dust}EE}$	0.2243	$0.225 \pm 0.047$	$Y_{\text{P}}$	0.245341	$0.245334^{+0.000067}_{-0.000060}$	$\chi_{\text{DR11CMass}}^2$	2.76	$3.09 \pm 0.81$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.246661^{+0.000067}_{-0.000061}$	$\chi_{\text{DR11LOWZ}}^2$	0.98	$1.10 \pm 0.62$
$A_{100}^{\text{dust}TE}$	0.1423	$0.141 \pm 0.038$	$10^5 D/H$	2.6135	$2.616 \pm 0.026$	$\chi_{\text{prior}}^2$	7.9	$21 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.030$	$\text{Age}/\text{Gyr}$	13.8113	$13.813 \pm 0.021$	$\chi_{\text{BAO}}^2$	4.80	$5.3 \pm 1.2$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.301 \pm 0.083$	$z_*$	1090.038	$1090.06 \pm 0.23$	$\chi_{\text{CMB}}^2$	2449.2	$2467.4 \pm 6.6$
$A_{143}^{\text{dust}TE}$	0.152	$0.155 \pm 0.055$	$r_*$	144.612	$144.61 \pm 0.24$			

Best-fit  $\chi_{\text{eff}}^2 = 2461.93$ ;  $\bar{\chi}_{\text{eff}}^2 = 2493.79$ ;  $R - 1 = 0.01676$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.07 MGS: 0.98 DR11CMass: 2.76 DR11LOWZ: 0.98 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 13.82 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.42



## 2.46 base\_plikHM\_TTTEEE\_lowl\_reion\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022260	$0.02226 \pm 0.00013$	$A_{217}^{\text{dustTE}}$	1.680	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.628	$1059.64 \pm 0.29$
$\Omega_c h^2$	0.11951	$0.1195 \pm 0.0010$	$c_{100}$	0.99821	$0.99818 \pm 0.00078$	$r_{\text{drag}}$	147.346	$147.36 \pm 0.24$
$100\theta_{\text{MC}}$	1.040821	$1.04082 \pm 0.00030$	$c_{217}$	0.99604	$0.9961 \pm 0.0014$	$k_D$	0.140516	$0.14050 \pm 0.00029$
$\tau$	0.0566	$0.0578^{+0.0068}_{-0.010}$	$H_0$	67.400	$67.42 \pm 0.45$	$100\theta_D$	0.160910	$0.16091 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0480	$3.051^{+0.015}_{-0.021}$	$\Omega_\Lambda$	0.6865	$0.6868 \pm 0.0062$	$z_{\text{eq}}$	3387.8	$3387 \pm 23$
$n_s$	0.96485	$0.9645 \pm 0.0038$	$\Omega_m$	0.3135	$0.3132 \pm 0.0062$	$k_{\text{eq}}$	0.010340	$0.010336 \pm 0.000070$
$y_{\text{cal}}$	1.00052	$1.0007 \pm 0.0025$	$\Omega_m h^2$	0.14241	$0.14236 \pm 0.00096$	$100\theta_{\text{eq}}$	0.81548	$0.8157 \pm 0.0043$
$A_{217}^{\text{CIB}}$	67.3	$64.6 \pm 6.5$	$\Omega_m h^3$	0.095987	$0.09598 \pm 0.00029$	$100\theta_{s,\text{eq}}$	0.45060	$0.4507 \pm 0.0022$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$\sigma_8$	0.8114	$0.8121^{+0.0071}_{-0.0083}$	$r_{\text{drag}}/D_V(0.57)$	0.071464	$0.07148 \pm 0.00034$
$A_{143}^{\text{tSZ}}$	7.15	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4543	$0.4545 \pm 0.0070$	$H(0.57)$	92.909	$92.92 \pm 0.21$
$A_{100}^{\text{PS}}$	258.1	$262 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.6075 \pm 0.0071$	$D_A(0.57)$	1390.4	$1390.2 \pm 6.1$
$A_{143}^{\text{PS}}$	40.8	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9883	$0.989^{+0.010}_{-0.011}$	$F_{\text{AP}}(0.57)$	0.67654	$0.6765 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	35.7	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4460	$2.449 \pm 0.026$	$f\sigma_8(0.57)$	0.4723	$0.4726^{+0.0049}_{-0.0055}$
$A_{217}^{\text{PS}}$	98.1	$97 \pm 10$	$z_{\text{re}}$	7.94	$8.03^{+0.73}_{-1.0}$	$\sigma_8(0.57)$	0.6031	$0.6037^{+0.0047}_{-0.0062}$
$A^{\text{kSZ}}$	0.01	$< 4.48$	$10^9 A_s$	2.1073	$2.113^{+0.031}_{-0.044}$	$f_{2000}^{143}$	29.92	$30.3 \pm 2.6$
$A_{100}^{\text{dustTT}}$	7.46	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8816	$1.882 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.69	$32.8 \pm 1.8$
$A_{143}^{\text{dustTT}}$	9.02	$9.0 \pm 1.8$	$D_{40}$	1231.8	$1234 \pm 12$	$f_{2000}^{217}$	106.22	$106.4 \pm 1.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.73	$17.2 \pm 4.1$	$D_{220}$	5732.3	$5737 \pm 38$	$\chi_{\text{lowl}}^2$	13.68	$13.89 \pm 0.91$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.3$	$D_{810}$	2537.9	$2538 \pm 13$	$\chi_{\text{plik}}^2$	2435.8	$2453.6 \pm 6.8$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0814 \pm 0.0057$	$D_{1420}$	815.91	$815.8 \pm 4.7$	$\chi_{\text{H070p6}}^2$	0.923	$0.93 \pm 0.26$
$A_{100 \times 143}^{\text{dustEE}}$	0.0488	$0.0490 \pm 0.0051$	$D_{2000}$	230.28	$230.2 \pm 1.5$	$\chi_{\text{JLA}}^2$	706.810	$706.83 \pm 0.20$
$A_{100 \times 217}^{\text{dustEE}}$	0.0990	$0.100 \pm 0.032$	$n_{s,0.002}$	0.96485	$0.9645 \pm 0.0038$	$\chi_{6\text{DF}}^2$	0.0578	$0.079 \pm 0.082$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1002 \pm 0.0069$	$Y_{\text{P}}$	0.245344	$0.245343^{+0.000066}_{-0.000059}$	$\chi_{\text{MGS}}^2$	1.039	$1.12 \pm 0.40$
$A_{143 \times 217}^{\text{dustEE}}$	0.2250	$0.225 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.246670	$0.246670^{+0.000066}_{-0.000059}$	$\chi_{\text{DR11CMAS}}^2$	2.679	$2.94 \pm 0.67$
$A_{217}^{\text{dustEE}}$	0.652	$0.65 \pm 0.13$	$10^5 D/H$	2.6122	$2.612 \pm 0.025$	$\chi_{\text{DR11LOWZ}}^2$	0.91	$0.96 \pm 0.57$
$A_{100}^{\text{dustTE}}$	0.1412	$0.141 \pm 0.038$	Age/Gyr	13.8097	$13.809 \pm 0.020$	$\chi_{\text{prior}}^2$	7.8	$21 \pm 6$
$A_{100 \times 143}^{\text{dustTE}}$	0.1311	$0.131 \pm 0.030$	$z_*$	1090.018	$1090.01 \pm 0.22$	$\chi_{\text{BAO}}^2$	4.68	$5.10 \pm 0.97$
$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.300 \pm 0.083$	$r_*$	144.642	$144.66 \pm 0.23$	$\chi_{\text{CMB}}^2$	2449.5	$2467.5 \pm 6.6$
$A_{143}^{\text{dustTE}}$	0.154	$0.155 \pm 0.055$	$100\theta_*$	1.041011	$1.04102 \pm 0.00030$			
$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.335 \pm 0.081$	$D_A/\text{Gpc}$	13.8944	$13.896 \pm 0.022$			

Best-fit  $\chi_{\text{eff}}^2 = 3169.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 3201.55$ ;  $R - 1 = 0.02083$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.06 MGS: 1.04 DR11CMAS: 2.68 DR11LOWZ: 0.91 CMB - commander\_rc2\_v1.1\_l2\_29\_B: 13.68 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.80 Hubble -

## 2.47 base\_plikHM\_TE

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022204	$0.02237 \pm 0.00029$	$\sigma_8$	0.7798	$0.834^{+0.031}_{-0.065}$	$r_*$	144.805	$144.91 \pm 0.49$
$\Omega_c h^2$	0.11905	$0.1182 \pm 0.0022$	$\sigma_8 \Omega_m^{0.5}$	0.4348	$0.461^{+0.021}_{-0.032}$	$100\theta_*$	1.04112	$1.04118 \pm 0.00051$
$100\theta_{MC}$	1.04092	$1.04100 \pm 0.00051$	$\sigma_8 \Omega_m^{0.25}$	0.5823	$0.620^{+0.025}_{-0.045}$	$D_A/\text{Gpc}$	13.9086	$13.917 \pm 0.046$
$\tau$	0.026	$< 0.111$	$\sigma_8/h^{0.5}$	0.949	$1.011^{+0.039}_{-0.075}$	$z_{\text{drag}}$	1059.47	$1059.80 \pm 0.61$
$\ln(10^{10} A_s)$	2.975	$3.108^{+0.073}_{-0.16}$	$\langle d^2 \rangle^{1/2}$	2.364	$2.497^{+0.091}_{-0.16}$	$r_{\text{drag}}$	147.530	$147.58 \pm 0.50$
$n_s$	0.9600	$0.971^{+0.013}_{-0.016}$	$z_{\text{re}}$	4.5	$10.4^{+4.2}_{-6.2}$	$k_D$	0.14028	$0.14035 \pm 0.00058$
$A_{100}^{\text{dustTE}}$	0.1394	$0.136 \pm 0.038$	$10^9 A_s$	1.959	$2.25^{+0.15}_{-0.36}$	$100\theta_D$	0.161018	$0.16084 \pm 0.00036$
$A_{100 \times 143}^{\text{dustTE}}$	0.1341	$0.133 \pm 0.030$	$10^9 A_s e^{-2\tau}$	1.8609	$1.870 \pm 0.021$	$z_{\text{eq}}$	3375.5	$3359 \pm 49$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.085$	$D_{40}$	1224.9	$1236^{+28}_{-36}$	$k_{\text{eq}}$	0.010302	$0.01025 \pm 0.00015$
$A_{143}^{\text{dustTE}}$	0.153	$0.153 \pm 0.054$	$D_{220}$	5701	$5713 \pm 60$	$100\theta_{\text{eq}}$	0.8176	$0.8213 \pm 0.0095$
$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.337 \pm 0.081$	$D_{810}$	2510.6	$2529 \pm 31$	$100\theta_{s,\text{eq}}$	0.45177	$0.4536 \pm 0.0049$
$A_{217}^{\text{dustTE}}$	1.650	$1.66 \pm 0.26$	$D_{1420}$	805.2	$815 \pm 14$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.07194 \pm 0.00076$
$c_{100}$	0.99924	$0.99924 \pm 0.00099$	$D_{2000}$	226.1	$230.9^{+5.5}_{-6.7}$	$H(0.57)$	92.939	$93.18 \pm 0.46$
$y_{\text{cal}}$	1.00000	$1.0000 \pm 0.0025$	$n_{s,0.002}$	0.9600	$0.971^{+0.013}_{-0.016}$	$D_A(0.57)$	1388.7	$1382 \pm 14$
$H_0$	67.55	$68.0 \pm 1.0$	$Y_P$	0.245319	$0.24539 \pm 0.00013$	$F_{AP}(0.57)$	0.67589	$0.6745 \pm 0.0034$
$\Omega_\Lambda$	0.6890	$0.695^{+0.014}_{-0.013}$	$Y_P^{\text{BBN}}$	0.246645	$0.24672 \pm 0.00013$	$f\sigma_8(0.57)$	0.4532	$0.483^{+0.019}_{-0.036}$
$\Omega_m$	0.3110	$0.305^{+0.013}_{-0.014}$	$10^5 D/H$	2.623	$2.593 \pm 0.055$	$\sigma_8(0.57)$	0.5802	$0.622^{+0.023}_{-0.050}$
$\Omega_m h^2$	0.14190	$0.1412 \pm 0.0021$	$\text{Age}/\text{Gyr}$	13.8103	$13.787 \pm 0.044$	$\chi_{\text{plikTE}}^2$	931.21	$938.9 \pm 4.1$
$\Omega_m h^3$	0.09585	$0.09604 \pm 0.00055$	$z_*$	1090.049	$1089.77 \pm 0.49$	$\chi_{\text{prior}}^2$	1.89	$7.9 \pm 3.7$

Best-fit  $\chi_{\text{eff}}^2 = 933.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 946.77$ ;  $R - 1 = 0.00574$  $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.21

## 2.48 base\_plikHM\_TE\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022249	$0.02234 \pm 0.00025$	$\sigma_8 \Omega_m^{0.25}$	0.5893	$0.618^{+0.022}_{-0.045}$	$r_{\text{drag}}$	147.546	$147.53 \pm 0.38$
$\Omega_c h^2$	0.11880	$0.1185 \pm 0.0013$	$\sigma_8/h^{0.5}$	0.961	$1.008^{+0.035}_{-0.073}$	$k_D$	0.14030	$0.14037 \pm 0.00053$
$100\theta_{\text{MC}}$	1.040974	$1.04097 \pm 0.00047$	$\langle d^2 \rangle^{1/2}$	2.389	$2.490^{+0.080}_{-0.16}$	$100\theta_D$	0.160972	$0.16086 \pm 0.00034$
$\tau$	0.0391	$< 0.104$	$z_{\text{re}}$	6.06	$10.0^{+3.9}_{-5.9}$	$z_{\text{eq}}$	3370.7	$3365 \pm 30$
$\ln(10^{10} A_s)$	3.003	$3.097^{+0.068}_{-0.15}$	$10^9 A_s$	2.014	$2.23^{+0.13}_{-0.33}$	$k_{\text{eq}}$	0.010288	$0.010270 \pm 0.000090$
$n_s$	0.9622	$0.969^{+0.012}_{-0.013}$	$10^9 A_s e^{-2\tau}$	1.8622	$1.871 \pm 0.020$	$100\theta_{\text{eq}}$	0.8187	$0.8200 \pm 0.0055$
$A_{100}^{\text{dustTE}}$	0.1372	$0.138 \pm 0.038$	$D_{40}$	1223.5	$1235^{+26}_{-34}$	$100\theta_{\text{s,eq}}$	0.45228	$0.4529 \pm 0.0028$
$A_{100 \times 143}^{\text{dustTE}}$	0.1345	$0.133 \pm 0.029$	$D_{220}$	5704	$5710 \pm 60$	$r_{\text{drag}}/D_V(0.57)$	0.071716	$0.07184 \pm 0.00043$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.304 \pm 0.084$	$D_{810}$	2514.0	$2528 \pm 30$	$H(0.57)$	93.011	$93.12 \pm 0.30$
$A_{143}^{\text{dustTE}}$	0.156	$0.153 \pm 0.054$	$D_{1420}$	807.1	$814 \pm 14$	$D_A(0.57)$	1386.7	$1384.0 \pm 8.1$
$A_{143 \times 217}^{\text{dustTE}}$	0.333	$0.336 \pm 0.081$	$D_{2000}$	227.0	$230.4^{+5.4}_{-6.2}$	$F_{\text{AP}}(0.57)$	0.67545	$0.6749 \pm 0.0019$
$A_{217}^{\text{dustTE}}$	1.646	$1.66 \pm 0.26$	$n_{\text{s},0.002}$	0.9622	$0.969^{+0.012}_{-0.013}$	$f\sigma_8(0.57)$	0.4589	$0.482^{+0.017}_{-0.035}$
$c_{100}$	0.99924	$0.9992 \pm 0.0010$	$Y_{\text{P}}$	0.245340	$0.24538 \pm 0.00011$	$\sigma_8(0.57)$	0.5884	$0.619^{+0.021}_{-0.047}$
$y_{\text{cal}}$	1.00002	$0.99999 \pm 0.0025$	$Y_{\text{P}}^{\text{BBN}}$	0.246666	$0.24670 \pm 0.00011$	$\chi_{\text{plikTE}}^2$	931.30	$938.3 \pm 3.9$
$H_0$	67.69	$67.89 \pm 0.59$	$10^5 \text{D}/\text{H}$	2.6142	$2.598 \pm 0.048$	$\chi_{6\text{DF}}^2$	0.0154	$0.045 \pm 0.063$
$\Omega_\Lambda$	0.6908	$0.6930 \pm 0.0076$	Age/Gyr	13.8031	$13.792 \pm 0.033$	$\chi_{\text{MGS}}^2$	1.34	$1.58 \pm 0.58$
$\Omega_{\text{m}}$	0.3092	$0.3070 \pm 0.0076$	$z_*$	1089.967	$1089.83 \pm 0.36$	$\chi_{\text{DR11CMass}}^2$	2.417	$2.86 \pm 0.65$
$\Omega_{\text{m}} h^2$	0.14170	$0.1415 \pm 0.0012$	$r_*$	144.834	$144.85 \pm 0.34$	$\chi_{\text{DR11LOWZ}}^2$	0.541	$0.54 \pm 0.51$
$\Omega_{\text{m}} h^3$	0.09592	$0.09603 \pm 0.00054$	$100\theta_*$	1.041170	$1.04116 \pm 0.00047$	$\chi_{\text{prior}}^2$	1.81	$7.9 \pm 3.7$
$\sigma_8$	0.7903	$0.830^{+0.028}_{-0.062}$	$D_A/\text{Gpc}$	13.9107	$13.913 \pm 0.033$	$\chi_{\text{BAO}}^2$	4.32	$5.02 \pm 0.97$
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4394	$0.460^{+0.017}_{-0.033}$	$z_{\text{drag}}$	1059.55	$1059.75 \pm 0.57$			

Best-fit  $\chi_{\text{eff}}^2 = 937.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 951.18$ ;  $R - 1 = 0.00975$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMass: 2.42 DR11LOWZ: 0.54 CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.30

## 2.49 base\_plikHM\_TE\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022280	$0.02237 \pm 0.00025$	$\sigma_8/h^{0.5}$	0.965	$1.009^{+0.036}_{-0.076}$	$100\theta_D$	0.160945	$0.16084 \pm 0.00034$
$\Omega_c h^2$	0.11834	$0.1182 \pm 0.0012$	$\langle d^2 \rangle^{1/2}$	2.399	$2.492^{+0.083}_{-0.16}$	$z_{\text{eq}}$	3360.5	$3360 \pm 29$
$100\theta_{\text{MC}}$	1.040981	$1.04101 \pm 0.00047$	$z_{\text{re}}$	6.9	$10.3^{+4.1}_{-5.9}$	$k_{\text{eq}}$	0.010256	$0.010254 \pm 0.000088$
$\tau$	0.0471	$< 0.108$	$10^9 A_s$	2.044	$2.24^{+0.14}_{-0.34}$	$100\theta_{\text{eq}}$	0.8206	$0.8211 \pm 0.0054$
$\ln(10^{10} A_s)$	3.018	$3.103^{+0.071}_{-0.15}$	$10^9 A_s e^{-2\tau}$	1.8606	$1.870 \pm 0.021$	$100\theta_{s,\text{eq}}$	0.45327	$0.4534 \pm 0.0028$
$n_s$	0.9638	$0.970^{+0.012}_{-0.013}$	$D_{40}$	1221.8	$1235^{+26}_{-36}$	$r_{\text{drag}}/D_V(0.57)$	0.071863	$0.07192 \pm 0.00041$
$A_{100}^{\text{dustTE}}$	0.1373	$0.138 \pm 0.038$	$D_{220}$	5704	$5712 \pm 60$	$H(0.57)$	93.084	$93.17 \pm 0.29$
$A_{100 \times 143}^{\text{dustTE}}$	0.1338	$0.133 \pm 0.029$	$D_{810}$	2513.8	$2529 \pm 30$	$D_A(0.57)$	1384.2	$1382.3 \pm 7.8$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.304 \pm 0.084$	$D_{1420}$	807.5	$815 \pm 14$	$F_{\text{AP}}(0.57)$	0.67477	$0.6745 \pm 0.0019$
$A_{143}^{\text{dustTE}}$	0.155	$0.152 \pm 0.054$	$D_{2000}$	227.3	$230.8^{+5.4}_{-6.3}$	$f\sigma_8(0.57)$	0.4610	$0.482^{+0.017}_{-0.036}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.336 \pm 0.081$	$n_{s,0.002}$	0.9638	$0.970^{+0.012}_{-0.013}$	$\sigma_8(0.57)$	0.5926	$0.621^{+0.022}_{-0.048}$
$A_{217}^{\text{dustTE}}$	1.649	$1.66 \pm 0.26$	$Y_{\text{P}}$	0.245353	$0.24539^{+0.00012}_{-0.00011}$	$\chi_{\text{plikTE}}^2$	931.33	$938.3 \pm 3.9$
$c_{100}$	0.99927	$0.9992 \pm 0.0010$	$Y_{\text{P}}^{\text{BBN}}$	0.246680	$0.24672^{+0.00012}_{-0.00011}$	$\chi_{\text{H070p6}}^2$	0.670	$0.64 \pm 0.26$
$y_{\text{cal}}$	0.99987	$1.0000 \pm 0.0025$	$10^5 D/H$	2.6083	$2.592 \pm 0.047$	$\chi_{\text{JLA}}^2$	706.625	$706.65 \pm 0.15$
$H_0$	67.88	$68.01 \pm 0.57$	Age/Gyr	13.7978	$13.787 \pm 0.032$	$\chi_{6\text{DF}}^2$	0.0029	$0.039 \pm 0.055$
$\Omega_\Lambda$	0.6934	$0.6945 \pm 0.0073$	$z_*$	1089.887	$1089.77 \pm 0.36$	$\chi_{\text{MGS}}^2$	1.54	$1.69 \pm 0.58$
$\Omega_m$	0.3066	$0.3055 \pm 0.0073$	$r_*$	144.930	$144.89 \pm 0.34$	$\chi_{\text{DR11CMass}}^2$	2.415	$2.87 \pm 0.65$
$\Omega_m h^2$	0.14127	$0.1412 \pm 0.0012$	$100\theta_*$	1.041172	$1.04119 \pm 0.00047$	$\chi_{\text{DR11LOWZ}}^2$	0.370	$0.44 \pm 0.44$
$\Omega_m h^3$	0.09590	$0.09605 \pm 0.00054$	$D_A/\text{Gpc}$	13.9199	$13.916 \pm 0.033$	$\chi_{\text{prior}}^2$	1.84	$7.9 \pm 3.7$
$\sigma_8$	0.7950	$0.832^{+0.029}_{-0.064}$	$z_{\text{drag}}$	1059.59	$1059.80 \pm 0.57$	$\chi_{\text{BAO}}^2$	4.33	$5.04 \pm 0.98$
$\sigma_8 \Omega_m^{0.5}$	0.4402	$0.460^{+0.018}_{-0.034}$	$r_{\text{drag}}$	147.633	$147.57 \pm 0.38$			
$\sigma_8 \Omega_m^{0.25}$	0.5916	$0.619^{+0.023}_{-0.046}$	$k_D$	0.14023	$0.14036 \pm 0.00053$			

Best-fit  $\chi_{\text{eff}}^2 = 1644.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 1658.51$ ;  $R - 1 = 0.01010$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.42 DR11LOWZ: 0.37 CMB - plik\_dx11dr2\_HM\_v18\_TE: 931.33 Hubble - H070p6: 0.67 SN - JLA December\_2013: 706.62

## 2.50 base\_plikHM\_EE

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02443	$0.0244 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4871	$0.472 \pm 0.040$	$100\theta_*$	1.03987	$1.03984 \pm 0.00091$
$\Omega_c h^2$	0.11259	$0.1132 \pm 0.0048$	$\sigma_8 \Omega_m^{0.25}$	0.6759	$0.652^{+0.050}_{-0.041}$	$D_A/\text{Gpc}$	13.923	$13.907 \pm 0.065$
$100\theta_{\text{MC}}$	1.03989	$1.03987 \pm 0.00095$	$\sigma_8/h^{0.5}$	1.110	$1.069^{+0.082}_{-0.061}$	$z_{\text{drag}}$	1064.01	$1064.1 \pm 2.6$
$\tau$	0.232	$0.190^{+0.082}_{-0.043}$	$\langle d^2 \rangle^{1/2}$	2.802	$2.70^{+0.20}_{-0.14}$	$r_{\text{drag}}$	146.81	$146.64 \pm 0.78$
$\ln(10^{10} A_s)$	3.414	$3.33^{+0.17}_{-0.091}$	$z_{\text{re}}$	19.89	$17.0^{+5.2}_{-2.1}$	$k_D$	0.14254	$0.1427 \pm 0.0014$
$n_s$	0.9812	$0.980 \pm 0.017$	$10^9 A_s$	3.039	$2.82^{+0.44}_{-0.30}$	$100\theta_D$	0.15829	$0.1583^{+0.0012}_{-0.0014}$
$A_{100}^{\text{dustEE}}$	0.0775	$0.0777 \pm 0.0066$	$10^9 A_s e^{-2\tau}$	1.9089	$1.912 \pm 0.026$	$z_{\text{eq}}$	3274	$3289^{+86}_{-97}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0442	$0.0446 \pm 0.0063$	$D_{40}$	1385	$1351^{+69}_{-80}$	$k_{\text{eq}}$	0.009993	$0.01004^{+0.00026}_{-0.00030}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0969	$0.099 \pm 0.033$	$D_{220}$	6112	$6112 \pm 210$	$100\theta_{\text{eq}}$	0.8420	$0.840 \pm 0.020$
$A_{143}^{\text{dustEE}}$	0.0958	$0.0955 \pm 0.0080$	$D_{810}$	2591.4	$2595 \pm 40$	$100\theta_{s,\text{eq}}$	0.4627	$0.4615 \pm 0.0098$
$A_{143 \times 217}^{\text{dustEE}}$	0.2176	$0.223 \pm 0.047$	$D_{1420}$	840.8	$842 \pm 19$	$r_{\text{drag}}/D_V(0.57)$	0.07375	$0.0736 \pm 0.0019$
$A_{217}^{\text{dustEE}}$	0.634	$0.64 \pm 0.13$	$D_{2000}$	244.5	$243.8 \pm 7.8$	$H(0.57)$	95.15	$95.2^{+1.6}_{-1.9}$
$y_{\text{cal}}$	0.99983	$1.0001 \pm 0.0025$	$n_{s,0.002}$	0.9812	$0.980 \pm 0.017$	$D_A(0.57)$	1334.8	$1337 \pm 39$
$H_0$	71.42	$71.3 \pm 2.9$	$Y_P$	0.24625	$0.24624 \pm 0.00052$	$F_{\text{AP}}(0.57)$	0.6651	$0.6661^{+0.0074}_{-0.0087}$
$\Omega_\Lambda$	0.7301	$0.726^{+0.034}_{-0.026}$	$Y_P^{\text{BBN}}$	0.24758	$0.24757 \pm 0.00052$	$f\sigma_8(0.57)$	0.5314	$0.512^{+0.039}_{-0.029}$
$\Omega_m$	0.2699	$0.274^{+0.026}_{-0.034}$	$10^5 \text{D}/\text{H}$	2.250	$2.26^{+0.18}_{-0.22}$	$\sigma_8(0.57)$	0.7099	$0.682^{+0.053}_{-0.031}$
$\Omega_m h^2$	0.13766	$0.1383^{+0.0036}_{-0.0041}$	Age/Gyr	13.587	$13.59 \pm 0.16$	$\chi_{\text{plikEE}}^2$	747.57	$756.3 \pm 4.4$
$\Omega_m h^3$	0.09832	$0.0984^{+0.0019}_{-0.0021}$	$z_*$	1086.93	$1087.0^{+1.6}_{-1.9}$	$\chi_{\text{prior}}^2$	3.00	$7.4 \pm 3.4$
$\sigma_8$	0.938	$0.902^{+0.069}_{-0.042}$	$r_*$	144.78	$144.61 \pm 0.69$			

Best-fit  $\chi_{\text{eff}}^2 = 750.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 763.68$ ;  $R - 1 = 0.00703$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_EE: 747.57

## 2.51 base\_plikHM\_EE\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02333	$0.02336 \pm 0.00068$	$\sigma_8/h^{0.5}$	1.138	$1.094^{+0.084}_{-0.059}$	$k_D$	0.14201	$0.1420 \pm 0.0012$
$\Omega_c h^2$	0.11757	$0.1176 \pm 0.0015$	$\langle d^2 \rangle^{1/2}$	2.846	$2.74^{+0.21}_{-0.15}$	$100\theta_D$	0.15934	$0.15934^{+0.00081}_{-0.00095}$
$100\theta_{MC}$	1.03944	$1.03946 \pm 0.00087$	$z_{re}$	19.44	$16.5^{+5.6}_{-2.8}$	$z_{eq}$	3367.0	$3368 \pm 36$
$\tau$	0.212	$0.172^{+0.079}_{-0.048}$	$10^9 A_s$	2.923	$2.72^{+0.40}_{-0.31}$	$k_{eq}$	0.010277	$0.01028 \pm 0.00011$
$\ln(10^{10} A_s)$	3.375	$3.29^{+0.16}_{-0.10}$	$10^9 A_s e^{-2\tau}$	1.9117	$1.911 \pm 0.026$	$100\theta_{eq}$	0.8212	$0.8211^{+0.0061}_{-0.0068}$
$n_s$	0.9685	$0.968 \pm 0.011$	$D_{40}$	1373	$1343^{+63}_{-80}$	$100\theta_{s,eq}$	0.45272	$0.4527 \pm 0.0033$
$A_{100}^{dustEE}$	0.0768	$0.0776 \pm 0.0064$	$D_{220}$	5966	$5965 \pm 150$	$r_{drag}/D_V(0.57)$	0.07188	$0.07189^{+0.00046}_{-0.00056}$
$A_{100 \times 143}^{dustEE}$	0.0437	$0.0445^{+0.0065}_{-0.0058}$	$D_{810}$	2572.1	$2574 \pm 35$	$H(0.57)$	93.59	$93.62 \pm 0.59$
$A_{100 \times 217}^{dustEE}$	0.0975	$0.097 \pm 0.033$	$D_{1420}$	828.4	$830 \pm 15$	$D_A(0.57)$	1374.1	$1374 \pm 13$
$A_{143}^{dustEE}$	0.0950	$0.0954^{+0.0073}_{-0.0085}$	$D_{2000}$	239.2	$238.6^{+5.5}_{-6.2}$	$F_{AP}(0.57)$	0.67347	$0.6735 \pm 0.0024$
$A_{143 \times 217}^{dustEE}$	0.2202	$0.220 \pm 0.046$	$n_{s,0.002}$	0.9685	$0.968 \pm 0.011$	$f\sigma_8(0.57)$	0.5447	$0.524^{+0.040}_{-0.028}$
$A_{217}^{dustEE}$	0.638	$0.64 \pm 0.13$	$Y_P$	0.245807	$0.24581^{+0.00031}_{-0.00027}$	$\sigma_8(0.57)$	0.7036	$0.677^{+0.053}_{-0.036}$
$y_{cal}$	1.00005	$1.0000 \pm 0.0025$	$Y_P^{BBN}$	0.247135	$0.24714^{+0.00031}_{-0.00028}$	$\chi^2_{plikEE}$	748.81	$756.3 \pm 4.2$
$H_0$	68.52	$68.55 \pm 0.87$	$10^5 D/H$	2.421	$2.42^{+0.10}_{-0.13}$	$\chi^2_{6DF}$	0.0000	$0.058 \pm 0.083$
$\Omega_\Lambda$	0.6985	$0.6985 \pm 0.0094$	Age/Gyr	13.734	$13.731 \pm 0.072$	$\chi^2_{MGS}$	1.68	$1.78 \pm 0.72$
$\Omega_m$	0.3015	$0.3015 \pm 0.0094$	$z_*$	1088.55	$1088.54^{+0.79}_{-0.90}$	$\chi^2_{DR11CMass}$	2.56	$3.17 \pm 0.93$
$\Omega_m h^2$	0.14154	$0.1416 \pm 0.0015$	$r_*$	144.32	$144.30 \pm 0.56$	$\chi^2_{DR11LOWZ}$	0.301	$0.48 \pm 0.53$
$\Omega_m h^3$	0.09698	$0.0971 \pm 0.0013$	$100\theta_*$	1.03953	$1.03954 \pm 0.00088$	$\chi^2_{prior}$	2.86	$7.3 \pm 3.4$
$\sigma_8$	0.942	$0.906^{+0.070}_{-0.048}$	$D_A/Gpc$	13.884	$13.881 \pm 0.055$	$\chi^2_{BAO}$	4.54	$5.5 \pm 1.4$
$\sigma_8 \Omega_m^{0.5}$	0.5172	$0.497^{+0.037}_{-0.030}$	$z_{drag}$	1061.95	$1062.0 \pm 1.5$			
$\sigma_8 \Omega_m^{0.25}$	0.6980	$0.671^{+0.051}_{-0.037}$	$r_{drag}$	146.67	$146.64 \pm 0.74$			

Best-fit  $\chi^2_{eff} = 756.21$ ;  $\bar{\chi}^2_{eff} = 769.06$ ;  $R - 1 = 0.01745$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.56 DR11LOWZ: 0.30 CMB - plik\_dx11dr2\_HM\_v18\_EE: 748.81

## 2.52 base\_plikHM\_EE\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02349	$0.02346 \pm 0.00066$	$\sigma_8/h^{0.5}$	1.134	$1.093^{+0.084}_{-0.059}$	$k_D$	0.14222	$0.1422 \pm 0.0012$
$\Omega_c h^2$	0.11730	$0.1174 \pm 0.0015$	$\langle d^2 \rangle^{1/2}$	2.841	$2.74^{+0.21}_{-0.15}$	$100\theta_D$	0.15915	$0.15923^{+0.00076}_{-0.00093}$
$100\theta_{MC}$	1.03938	$1.03947 \pm 0.00086$	$z_{re}$	19.31	$16.5^{+5.6}_{-2.8}$	$z_{eq}$	3364.3	$3365 \pm 35$
$\tau$	0.212	$0.173^{+0.078}_{-0.049}$	$10^9 A_s$	2.922	$2.72^{+0.40}_{-0.32}$	$k_{eq}$	0.010268	$0.01027 \pm 0.00011$
$\ln(10^{10} A_s)$	3.375	$3.30^{+0.16}_{-0.10}$	$10^9 A_s e^{-2\tau}$	1.9139	$1.913 \pm 0.026$	$100\theta_{eq}$	0.8220	$0.8219 \pm 0.0061$
$n_s$	0.9686	$0.968 \pm 0.011$	$D_{40}$	1376	$1345^{+63}_{-81}$	$100\theta_{s,eq}$	0.45307	$0.4530 \pm 0.0032$
$A_{100}^{dustEE}$	0.0771	$0.0775 \pm 0.0064$	$D_{220}$	5992	$5981 \pm 140$	$r_{drag}/D_V(0.57)$	0.071967	$0.07197^{+0.00045}_{-0.00053}$
$A_{100 \times 143}^{dustEE}$	0.0438	$0.0444^{+0.0065}_{-0.0058}$	$D_{810}$	2575.8	$2577 \pm 34$	$H(0.57)$	93.72	$93.72 \pm 0.57$
$A_{100 \times 217}^{dustEE}$	0.0983	$0.097 \pm 0.033$	$D_{1420}$	830.0	$831 \pm 15$	$D_A(0.57)$	1371.1	$1371 \pm 12$
$A_{143}^{dustEE}$	0.0948	$0.0953^{+0.0073}_{-0.0085}$	$D_{2000}$	239.9	$239.2^{+5.5}_{-6.1}$	$F_{AP}(0.57)$	0.67295	$0.6730 \pm 0.0023$
$A_{143 \times 217}^{dustEE}$	0.2207	$0.220 \pm 0.046$	$n_{s,0.002}$	0.9686	$0.968 \pm 0.011$	$f\sigma_8(0.57)$	0.5429	$0.523^{+0.040}_{-0.028}$
$A_{217}^{dustEE}$	0.640	$0.64 \pm 0.13$	$Y_P$	0.245875	$0.24585^{+0.00030}_{-0.00026}$	$\sigma_8(0.57)$	0.7027	$0.677^{+0.053}_{-0.036}$
$y_{cal}$	0.99990	$1.0000 \pm 0.0025$	$Y_P^{BBN}$	0.247203	$0.24718^{+0.00030}_{-0.00026}$	$\chi^2_{plikEE}$	748.67	$756.2 \pm 4.2$
$H_0$	68.72	$68.71 \pm 0.82$	$10^5 D/H$	2.395	$2.404^{+0.098}_{-0.12}$	$\chi^2_{H070p6}$	0.323	$0.39 \pm 0.29$
$\Omega_\Lambda$	0.7005	$0.7002 \pm 0.0088$	Age/Gyr	13.719	$13.720 \pm 0.069$	$\chi^2_{JLA}$	706.517	$706.59 \pm 0.13$
$\Omega_m$	0.2995	$0.2998 \pm 0.0088$	$z_*$	1088.35	$1088.41^{+0.73}_{-0.88}$	$\chi^2_{6DF}$	0.0018	$0.054 \pm 0.078$
$\Omega_m h^2$	0.14143	$0.1415 \pm 0.0015$	$r_*$	144.28	$144.28 \pm 0.56$	$\chi^2_{MGS}$	1.82	$1.90 \pm 0.70$
$\Omega_m h^3$	0.09720	$0.0972 \pm 0.0012$	$100\theta_*$	1.03946	$1.03954 \pm 0.00087$	$\chi^2_{DR11CMAS}$	2.63	$3.18 \pm 0.93$
$\sigma_8$	0.940	$0.906^{+0.070}_{-0.048}$	$D_A/Gpc$	13.880	$13.880 \pm 0.055$	$\chi^2_{DR11LOWZ}$	0.218	$0.39 \pm 0.44$
$\sigma_8 \Omega_m^{0.5}$	0.5144	$0.496^{+0.037}_{-0.029}$	$z_{drag}$	1062.30	$1062.2^{+1.6}_{-1.4}$	$\chi^2_{prior}$	2.88	$7.3 \pm 3.4$
$\sigma_8 \Omega_m^{0.25}$	0.6954	$0.671^{+0.051}_{-0.037}$	$r_{drag}$	146.57	$146.60 \pm 0.74$	$\chi^2_{BAO}$	4.67	$5.5 \pm 1.4$

Best-fit  $\chi^2_{eff} = 1463.07$ ;  $\bar{\chi}^2_{eff} = 1475.93$ ;  $R - 1 = 0.01752$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.82 DR11CMAS: 2.63 DR11LOWZ: 0.22 CMB - plik\_dx11dr2\_HM\_v18\_EE: 748.67 Hubble - H070p6: 0.32 SN - JLA December\_2013: 706.52

### 2.53 base\_plikHM\_TE\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02231 \pm 0.00027$	$\sigma_8 \Omega_m^{0.5}$	0.4478	$0.4486 \pm 0.0090$	$D_A/\text{Gpc}$	13.9140	$13.916 \pm 0.046$
$\Omega_c h^2$	0.11855	$0.1185 \pm 0.0022$	$\sigma_8 \Omega_m^{0.25}$	0.6012	$0.6025 \pm 0.0086$	$z_{\text{drag}}$	1059.67	$1059.67 \pm 0.55$
$100\theta_{\text{MC}}$	1.04090	$1.04094 \pm 0.00053$	$\sigma_8/h^{0.5}$	0.9802	$0.983 \pm 0.013$	$r_{\text{drag}}$	147.550	$147.57 \pm 0.49$
$\tau$	0.0595	$0.063 \pm 0.021$	$\langle d^2 \rangle^{1/2}$	2.4312	$2.437 \pm 0.037$	$k_D$	0.14033	$0.14031 \pm 0.00055$
$\ln(10^{10} A_s)$	3.0451	$3.051 \pm 0.038$	$z_{\text{re}}$	8.19	$8.4_{-1.9}^{+2.3}$	$100\theta_D$	0.160891	$0.16090 \pm 0.00032$
$n_s$	0.9656	$0.966 \pm 0.012$	$10^9 A_s$	2.101	$2.116_{-0.090}^{+0.078}$	$z_{\text{eq}}$	3366.0	$3364 \pm 50$
$y_{\text{cal}}$	0.99984	$1.0000 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8657	$1.866 \pm 0.016$	$k_{\text{eq}}$	0.010274	$0.01027 \pm 0.00015$
$A_{100}^{\text{dustTE}}$	0.1349	$0.137 \pm 0.038$	$D_{40}$	1223.8	$1225 \pm 26$	$100\theta_{\text{eq}}$	0.8196	$0.8201 \pm 0.0096$
$A_{100 \times 143}^{\text{dustTE}}$	0.1293	$0.133 \pm 0.029$	$D_{220}$	5707	$5707 \pm 57$	$100\theta_{s,\text{eq}}$	0.45272	$0.4530 \pm 0.0049$
$A_{100 \times 217}^{\text{dustTE}}$	0.297	$0.302 \pm 0.085$	$D_{810}$	2520.2	$2520 \pm 23$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.07183 \pm 0.00076$
$A_{143}^{\text{dustTE}}$	0.146	$0.153 \pm 0.054$	$D_{1420}$	810.2	$810 \pm 11$	$H(0.57)$	93.060	$93.09 \pm 0.45$
$A_{143 \times 217}^{\text{dustTE}}$	0.340	$0.335 \pm 0.080$	$D_{2000}$	228.58	$228.7 \pm 4.1$	$D_A(0.57)$	1385.2	$1385 \pm 14$
$A_{217}^{\text{dustTE}}$	1.684	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9656	$0.966 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67509	$0.6750 \pm 0.0034$
$c_{100}$	0.99943	$0.99926 \pm 0.00099$	$Y_P$	0.245364	$0.24536 \pm 0.00012$	$f\sigma_8(0.57)$	0.4683	$0.4694 \pm 0.0065$
$H_0$	67.80	$67.9 \pm 1.0$	$Y_P^{\text{BBN}}$	0.246690	$0.24669 \pm 0.00012$	$\sigma_8(0.57)$	0.6013	$0.603 \pm 0.011$
$\Omega_\Lambda$	0.6922	$0.693 \pm 0.013$	$10^5 D/H$	2.604	$2.604 \pm 0.050$	$\chi_{\text{lensing}}^2$	8.72	$9.7 \pm 1.4$
$\Omega_m$	0.3078	$0.307 \pm 0.013$	Age/Gyr	13.7988	$13.796 \pm 0.042$	$\chi_{\text{plikTE}}^2$	931.06	$938.3 \pm 4.0$
$\Omega_m h^2$	0.14150	$0.1414 \pm 0.0021$	$z_*$	1089.874	$1089.87 \pm 0.47$	$\chi_{\text{prior}}^2$	2.09	$7.8 \pm 3.6$
$\Omega_m h^3$	0.09594	$0.09595 \pm 0.00051$	$r_*$	144.857	$144.88 \pm 0.50$	$\chi_{\text{CMB}}^2$	939.77	$948.1 \pm 4.2$
$\sigma_8$	0.8071	$0.809 \pm 0.013$	$100\theta_*$	1.04109	$1.04113 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 941.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 955.88$ ;  $R - 1 = 0.00937$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.71 plik\_dx11dr2\_HM\_v18\_TE: 931.06



## 2.54 base\_plikHM\_TE\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022296	$0.02230 \pm 0.00023$	$\sigma_8/h^{0.5}$	0.9821	$0.982 \pm 0.013$	$100\theta_D$	0.160916	$0.16090 \pm 0.00030$
$\Omega_c h^2$	0.11851	$0.1185 \pm 0.0013$	$\langle d^2 \rangle^{1/2}$	2.4370	$2.436 \pm 0.038$	$z_{\text{eq}}$	3364.9	$3366 \pm 30$
$100\theta_{\text{MC}}$	1.040973	$1.04093 \pm 0.00047$	$z_{\text{re}}$	8.43	$8.3^{+1.8}_{-1.5}$	$k_{\text{eq}}$	0.010270	$0.010273 \pm 0.000091$
$\tau$	0.0619	$0.062 \pm 0.017$	$10^9 A_s$	2.111	$2.111 \pm 0.065$	$100\theta_{\text{eq}}$	0.8199	$0.8197 \pm 0.0056$
$\ln(10^{10} A_s)$	3.0498	$3.049 \pm 0.031$	$10^9 A_s e^{-2\tau}$	1.8655	$1.866 \pm 0.015$	$100\theta_{s,\text{eq}}$	0.45286	$0.4528 \pm 0.0029$
$n_s$	0.9653	$0.966 \pm 0.010$	$D_{40}$	1225.3	$1225 \pm 24$	$r_{\text{drag}}/D_V(0.57)$	0.071810	$0.07179 \pm 0.00043$
$y_{\text{cal}}$	0.99999	$1.0000 \pm 0.0025$	$D_{220}$	5708	$5707 \pm 58$	$H(0.57)$	93.076	$93.07 \pm 0.29$
$A_{100}^{\text{dustTE}}$	0.1380	$0.138 \pm 0.038$	$D_{810}$	2519.8	$2520 \pm 23$	$D_A(0.57)$	1384.8	$1385.1 \pm 8.0$
$A_{100 \times 143}^{\text{dustTE}}$	0.1349	$0.133 \pm 0.029$	$D_{1420}$	809.9	$810 \pm 11$	$F_{\text{AP}}(0.57)$	0.67499	$0.6751 \pm 0.0020$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.302 \pm 0.085$	$D_{2000}$	228.48	$228.7 \pm 3.8$	$f\sigma_8(0.57)$	0.4693	$0.4693 \pm 0.0065$
$A_{143}^{\text{dustTE}}$	0.156	$0.154 \pm 0.053$	$n_{s,0.002}$	0.9653	$0.966 \pm 0.010$	$\sigma_8(0.57)$	0.6027	$0.6027 \pm 0.0094$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.336 \pm 0.080$	$Y_{\text{P}}$	0.245360	$0.24536 \pm 0.00010$	$\chi^2_{\text{lensing}}$	8.70	$9.7 \pm 1.4$
$A_{217}^{\text{dustTE}}$	1.642	$1.65 \pm 0.25$	$Y_{\text{P}}^{\text{BBN}}$	0.246687	$0.24669 \pm 0.00010$	$\chi^2_{\text{plikTE}}$	931.38	$937.6 \pm 3.8$
$c_{100}$	0.99923	$0.9993 \pm 0.0010$	$10^5 D/H$	2.6053	$2.605 \pm 0.043$	$\chi^2_{6\text{DF}}$	0.0062	$0.049 \pm 0.067$
$H_0$	67.83	$67.82 \pm 0.59$	Age/Gyr	13.7971	$13.798 \pm 0.031$	$\chi^2_{\text{MGS}}$	1.47	$1.52 \pm 0.58$
$\Omega_\Lambda$	0.6926	$0.6922 \pm 0.0077$	$z_*$	1089.881	$1089.88 \pm 0.34$	$\chi^2_{\text{DR11CMass}}$	2.406	$2.87 \pm 0.65$
$\Omega_m$	0.3074	$0.3078 \pm 0.0077$	$r_*$	144.873	$144.86 \pm 0.33$	$\chi^2_{\text{DR11LOWZ}}$	0.427	$0.59 \pm 0.54$
$\Omega_m h^2$	0.14145	$0.1415 \pm 0.0012$	$100\theta_*$	1.041165	$1.04112 \pm 0.00047$	$\chi^2_{\text{prior}}$	1.80	$7.8 \pm 3.6$
$\Omega_m h^3$	0.09595	$0.09595 \pm 0.00050$	$D_A/\text{Gpc}$	13.9145	$13.914 \pm 0.033$	$\chi^2_{\text{CMB}}$	940.08	$947.4 \pm 4.0$
$\sigma_8$	0.8089	$0.809 \pm 0.012$	$z_{\text{drag}}$	1059.67	$1059.67 \pm 0.51$	$\chi^2_{\text{BAO}}$	4.31	$5.02 \pm 0.97$
$\sigma_8 \Omega_m^{0.5}$	0.4485	$0.4487 \pm 0.0072$	$r_{\text{drag}}$	147.568	$147.56 \pm 0.36$			
$\sigma_8 \Omega_m^{0.25}$	0.6023	$0.6025 \pm 0.0084$	$k_D$	0.140307	$0.14032 \pm 0.00048$			

Best-fit  $\chi^2_{\text{eff}} = 946.19$ ;  $\bar{\chi}^2_{\text{eff}} = 960.24$ ;  $R - 1 = 0.01208$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - smica\_g30\_ftl\_full\_pp: 8.70 plik\_dx11dr2\_HM\_v18\_TE: 931.38

## 2.55 base\_plikHM\_TE\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022314	$0.02233 \pm 0.00023$	$\sigma_8/h^{0.5}$	0.9820	$0.982 \pm 0.014$	$100\theta_D$	0.160896	$0.16088 \pm 0.00030$
$\Omega_c h^2$	0.11835	$0.1183 \pm 0.0012$	$\langle d^2 \rangle^{1/2}$	2.4344	$2.435 \pm 0.037$	$z_{\text{eq}}$	3361.5	$3360 \pm 29$
$100\theta_{\text{MC}}$	1.040965	$1.04096 \pm 0.00047$	$z_{\text{re}}$	8.48	$8.5^{+1.8}_{-1.5}$	$k_{\text{eq}}$	0.010260	$0.010256 \pm 0.000088$
$\tau$	0.0625	$0.063 \pm 0.017$	$10^9 A_s$	2.114	$2.118 \pm 0.065$	$100\theta_{\text{eq}}$	0.8205	$0.8208 \pm 0.0054$
$\ln(10^{10} A_s)$	3.0512	$3.053 \pm 0.030$	$10^9 A_s e^{-2\tau}$	1.8657	$1.865 \pm 0.015$	$100\theta_{s,\text{eq}}$	0.45320	$0.4533 \pm 0.0028$
$n_s$	0.9666	$0.967 \pm 0.010$	$D_{40}$	1223.0	$1224^{+23}_{-26}$	$r_{\text{drag}}/D_V(0.57)$	0.071860	$0.07189 \pm 0.00042$
$y_{\text{cal}}$	1.00001	$1.0000 \pm 0.0025$	$D_{220}$	5708	$5708 \pm 57$	$H(0.57)$	93.105	$93.13 \pm 0.28$
$A_{100}^{\text{dustTE}}$	0.1378	$0.137 \pm 0.038$	$D_{810}$	2521.4	$2521 \pm 23$	$D_A(0.57)$	1383.9	$1383.4 \pm 7.7$
$A_{100 \times 143}^{\text{dustTE}}$	0.1319	$0.133 \pm 0.029$	$D_{1420}$	810.9	$811 \pm 11$	$F_{\text{AP}}(0.57)$	0.67475	$0.6747 \pm 0.0019$
$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.302 \pm 0.085$	$D_{2000}$	228.87	$228.9 \pm 3.8$	$f\sigma_8(0.57)$	0.4692	$0.4693 \pm 0.0065$
$A_{143}^{\text{dustTE}}$	0.152	$0.153 \pm 0.053$	$n_{s,0.002}$	0.9666	$0.967 \pm 0.010$	$\sigma_8(0.57)$	0.6032	$0.6036 \pm 0.0093$
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.335 \pm 0.080$	$Y_{\text{P}}$	0.245368	$0.24537 \pm 0.00010$	$\chi^2_{\text{lensing}}$	8.69	$9.7 \pm 1.4$
$A_{217}^{\text{dustTE}}$	1.657	$1.65 \pm 0.25$	$Y_{\text{P}}^{\text{BBN}}$	0.246695	$0.24670 \pm 0.00010$	$\chi^2_{\text{plikTE}}$	931.28	$937.6 \pm 3.8$
$c_{100}$	0.99927	$0.9993 \pm 0.0010$	$10^5 D/H$	2.6019	$2.599 \pm 0.043$	$\chi^2_{\text{H070p6}}$	0.660	$0.67 \pm 0.27$
$H_0$	67.90	$67.94 \pm 0.56$	Age/Gyr	13.7948	$13.793 \pm 0.031$	$\chi^2_{\text{JLA}}$	706.623	$706.66 \pm 0.16$
$\Omega_\Lambda$	0.6935	$0.6939 \pm 0.0074$	$z_*$	1089.845	$1089.82 \pm 0.33$	$\chi^2_{6\text{DF}}$	0.0030	$0.040 \pm 0.057$
$\Omega_{\text{m}}$	0.3065	$0.3061 \pm 0.0074$	$r_*$	144.902	$144.91 \pm 0.33$	$\chi^2_{\text{MGS}}$	1.54	$1.64 \pm 0.57$
$\Omega_{\text{m}} h^2$	0.14131	$0.1413 \pm 0.0012$	$100\theta_*$	1.041156	$1.04115 \pm 0.00047$	$\chi^2_{\text{DR11CMass}}$	2.418	$2.85 \pm 0.63$
$\Omega_{\text{m}} h^3$	0.09596	$0.09597 \pm 0.00050$	$D_A/\text{Gpc}$	13.9174	$13.918 \pm 0.032$	$\chi^2_{\text{DR11LOWZ}}$	0.372	$0.48 \pm 0.46$
$\sigma_8$	0.8092	$0.810 \pm 0.012$	$z_{\text{drag}}$	1059.70	$1059.72 \pm 0.51$	$\chi^2_{\text{prior}}$	1.91	$7.8 \pm 3.6$
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4480	$0.4479 \pm 0.0072$	$r_{\text{drag}}$	147.590	$147.59 \pm 0.36$	$\chi^2_{\text{CMB}}$	939.97	$947.4 \pm 4.0$
$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6021	$0.6022 \pm 0.0084$	$k_D$	0.140297	$0.14031 \pm 0.00048$	$\chi^2_{\text{BAO}}$	4.33	$5.01 \pm 0.95$

Best-fit  $\chi^2_{\text{eff}} = 1653.50$ ;  $\bar{\chi}^2_{\text{eff}} = 1667.55$ ;  $R - 1 = 0.01133$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.42 DR11LOWZ: 0.37 CMB - smica\_g30\_ftl\_full\_pp: 8.69 plik\_dx11dr2\_HM\_v18\_TE: 931.28 Hubble - H070p6: 0.66 SN  
- JLA December\_2013: 706.62

## 2.56 base\_plikHM\_EE\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02329	$0.0235 \pm 0.0011$	$\sigma_8 \Omega_m^{0.25}$	0.5776	$0.576 \pm 0.020$	$z_{\text{drag}}$	1061.76	$1062.1 \pm 2.1$
$\Omega_c h^2$	0.11634	$0.1149 \pm 0.0040$	$\sigma_8 / h^{0.5}$	0.9438	$0.943 \pm 0.029$	$r_{\text{drag}}$	147.05	$147.22^{+0.65}_{-0.75}$
$100\theta_{\text{MC}}$	1.04015	$1.04027 \pm 0.00089$	$\langle d^2 \rangle^{1/2}$	2.365	$2.364 \pm 0.057$	$k_D$	0.14158	$0.1415 \pm 0.0012$
$\tau$	0.0384	$0.050^{+0.013}_{-0.037}$	$z_{\text{re}}$	5.77	$6.8^{+2.4}_{-2.9}$	$100\theta_D$	0.15955	$0.1594^{+0.0011}_{-0.0012}$
$\ln(10^{10} A_s)$	3.0179	$3.039^{+0.033}_{-0.058}$	$10^9 A_s$	2.045	$2.091^{+0.065}_{-0.12}$	$z_{\text{eq}}$	3337	$3307 \pm 76$
$n_s$	0.9693	$0.974 \pm 0.015$	$10^9 A_s e^{-2\tau}$	1.8939	$1.888 \pm 0.023$	$k_{\text{eq}}$	0.010184	$0.01009 \pm 0.00023$
$y_{\text{cal}}$	0.99999	$0.9999 \pm 0.0025$	$D_{40}$	1240.9	$1236 \pm 31$	$100\theta_{\text{eq}}$	0.8272	$0.834^{+0.016}_{-0.018}$
$A_{100}^{\text{dustEE}}$	0.0809	$0.0815 \pm 0.0060$	$D_{220}$	5914	$5925 \pm 170$	$100\theta_{s,\text{eq}}$	0.4559	$0.4591^{+0.0078}_{-0.0087}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0472	$0.0487 \pm 0.0055$	$D_{810}$	2569.4	$2568 \pm 37$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.0730^{+0.0014}_{-0.0016}$
$A_{100 \times 217}^{\text{dustEE}}$	0.1047	$0.099 \pm 0.033$	$D_{1420}$	830.9	$832 \pm 18$	$H(0.57)$	93.87	$94.3^{+1.2}_{-1.5}$
$A_{143}^{\text{dustEE}}$	0.0988	$0.0998 \pm 0.0073$	$D_{2000}$	235.6	$236.5 \pm 6.9$	$D_A(0.57)$	1365.7	$1356 \pm 32$
$A_{143 \times 217}^{\text{dustEE}}$	0.2220	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9693	$0.974 \pm 0.015$	$F_{\text{AP}}(0.57)$	0.6713	$0.6692 \pm 0.0067$
$A_{217}^{\text{dustEE}}$	0.655	$0.65 \pm 0.13$	$Y_P$	0.245786	$0.24586 \pm 0.00044$	$f\sigma_8(0.57)$	0.4516	$0.451 \pm 0.013$
$H_0$	69.16	$69.9^{+2.3}_{-2.6}$	$Y_P^{\text{BBN}}$	0.247114	$0.24719 \pm 0.00044$	$\sigma_8(0.57)$	0.5882	$0.5927^{+0.0099}_{-0.015}$
$\Omega_\Lambda$	0.7067	$0.714^{+0.027}_{-0.024}$	$10^5 D/H$	2.429	$2.40^{+0.16}_{-0.19}$	$\chi^2_{\text{lensing}}$	9.12	$10.6 \pm 1.7$
$\Omega_m$	0.2933	$0.286^{+0.024}_{-0.027}$	Age/Gyr	13.712	$13.68 \pm 0.13$	$\chi^2_{\text{plikEE}}$	751.83	$758.4 \pm 4.1$
$\Omega_m h^2$	0.14028	$0.1390 \pm 0.0032$	$z_*$	1088.50	$1088.2 \pm 1.5$	$\chi^2_{\text{prior}}$	3.36	$8.0 \pm 3.5$
$\Omega_m h^3$	0.09701	$0.0972 \pm 0.0016$	$r_*$	144.68	$144.90^{+0.56}_{-0.69}$	$\chi^2_{\text{CMB}}$	760.95	$768.9 \pm 4.4$
$\sigma_8$	0.7848	$0.788^{+0.016}_{-0.018}$	$100\theta_*$	1.04024	$1.04034 \pm 0.00085$			
$\sigma_8 \Omega_m^{0.5}$	0.4250	$0.421 \pm 0.023$	$D_A/\text{Gpc}$	13.908	$13.928^{+0.055}_{-0.065}$			

Best-fit  $\chi^2_{\text{eff}} = 764.31$ ;  $\bar{\chi}^2_{\text{eff}} = 776.92$ ;  $R - 1 = 0.00961$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.12 plik\_dx11dr2\_HM\_v18\_EE: 751.83

## 2.57 base\_plikHM\_EE\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02289	$0.02284 \pm 0.00059$	$\sigma_8/h^{0.5}$	0.9522	$0.957^{+0.018}_{-0.023}$	$k_D$	0.14127	$0.1411^{+0.0012}_{-0.00099}$
$\Omega_c h^2$	0.11792	$0.1177 \pm 0.0015$	$\langle d^2 \rangle^{1/2}$	2.3770	$2.387^{+0.042}_{-0.050}$	$100\theta_D$	0.15997	$0.16007^{+0.00072}_{-0.00084}$
$100\theta_{MC}$	1.03985	$1.03995 \pm 0.00077$	$z_{re}$	5.24	$5.9^{+2.0}_{-2.7}$	$z_{eq}$	3364.9	$3358 \pm 33$
$\tau$	0.0330	$< 0.0476$	$10^9 A_s$	2.021	$2.046^{+0.047}_{-0.084}$	$k_{eq}$	0.010270	$0.01025 \pm 0.00010$
$\ln(10^{10} A_s)$	3.0064	$3.018^{+0.024}_{-0.040}$	$10^9 A_s e^{-2\tau}$	1.8923	$1.888 \pm 0.021$	$100\theta_{eq}$	0.8206	$0.8219 \pm 0.0061$
$n_s$	0.9656	$0.966 \pm 0.011$	$D_{40}$	1240.0	$1238 \pm 31$	$100\theta_{s,eq}$	0.45279	$0.4535 \pm 0.0031$
$y_{cal}$	0.99980	$0.9998 \pm 0.0025$	$D_{220}$	5854	$5839 \pm 120$	$r_{drag}/D_V(0.57)$	0.071804	$0.07190 \pm 0.00049$
$A_{100}^{dustEE}$	0.0808	$0.0810 \pm 0.0060$	$D_{810}$	2559.8	$2555 \pm 31$	$H(0.57)$	93.31	$93.34 \pm 0.55$
$A_{100 \times 143}^{dustEE}$	0.0479	$0.0481 \pm 0.0055$	$D_{1420}$	825.5	$824 \pm 14$	$D_A(0.57)$	1379.7	$1379 \pm 12$
$A_{100 \times 217}^{dustEE}$	0.0978	$0.0996 \pm 0.033$	$D_{2000}$	233.4	$232.9 \pm 5.0$	$F_{AP}(0.57)$	0.67424	$0.6739 \pm 0.0024$
$A_{143}^{dustEE}$	0.0991	$0.0993 \pm 0.0073$	$n_{s,0.002}$	0.9656	$0.966 \pm 0.011$	$f\sigma_8(0.57)$	0.4553	$0.4575^{+0.0080}_{-0.010}$
$A_{143 \times 217}^{dustEE}$	0.2233	$0.224 \pm 0.046$	$Y_P$	0.245620	$0.24559 \pm 0.00026$	$\sigma_8(0.57)$	0.5865	$0.5900^{+0.0082}_{-0.013}$
$A_{217}^{dustEE}$	0.656	$0.65 \pm 0.13$	$Y_P^{BBN}$	0.246948	$0.24692 \pm 0.00026$	$\chi^2_{lensing}$	9.00	$10.0 \pm 1.4$
$H_0$	68.16	$68.25 \pm 0.84$	$10^5 D/H$	2.497	$2.51^{+0.10}_{-0.11}$	$\chi^2_{plikEE}$	752.02	$758.2 \pm 4.0$
$\Omega_\Lambda$	0.6955	$0.6967 \pm 0.0092$	Age/Gyr	13.768	$13.769 \pm 0.067$	$\chi^2_{6DF}$	0.0029	$0.056 \pm 0.078$
$\Omega_m$	0.3045	$0.3033 \pm 0.0092$	$z_*$	1089.11	$1089.16 \pm 0.76$	$\chi^2_{MGS}$	1.54	$1.74 \pm 0.70$
$\Omega_m h^2$	0.14145	$0.1412 \pm 0.0014$	$r_*$	144.574	$144.67^{+0.45}_{-0.54}$	$\chi^2_{DR11CMAS}$	2.49	$3.10 \pm 0.88$
$\Omega_m h^3$	0.09641	$0.0963 \pm 0.0011$	$100\theta_*$	1.03999	$1.04009 \pm 0.00077$	$\chi^2_{DR11LOWZ}$	0.395	$0.49 \pm 0.53$
$\sigma_8$	0.7862	$0.790^{+0.012}_{-0.017}$	$D_A/Gpc$	13.901	$13.910^{+0.046}_{-0.054}$	$\chi^2_{prior}$	3.51	$7.9 \pm 3.5$
$\sigma_8 \Omega_m^{0.5}$	0.4338	$0.435^{+0.011}_{-0.012}$	$z_{drag}$	1060.96	$1060.8 \pm 1.3$	$\chi^2_{CMB}$	761.02	$768.2 \pm 4.1$
$\sigma_8 \Omega_m^{0.25}$	0.5840	$0.587^{+0.011}_{-0.014}$	$r_{drag}$	147.07	$147.19^{+0.59}_{-0.70}$	$\chi^2_{BAO}$	4.43	$5.4 \pm 1.3$

Best-fit  $\chi^2_{eff} = 768.95$ ;  $\bar{\chi}^2_{eff} = 781.51$ ;  $R - 1 = 0.01617$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMAS: 2.49 DR11LOWZ: 0.40 CMB - smica\_g30\_ftl\_full\_pp: 9.00 plik\_dx11dr2\_HM\_v18\_EE: 752.02

## 2.58 base\_plikHM\_EE\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02302	$0.02294 \pm 0.00058$	$\langle d^2 \rangle^{1/2}$	2.3737	$2.383^{+0.041}_{-0.050}$	$z_{\text{eq}}$	3363.5	$3354 \pm 32$
$\Omega_c h^2$	0.11773	$0.1174 \pm 0.0014$	$z_{\text{re}}$	5.14	$5.9^{+1.9}_{-2.7}$	$k_{\text{eq}}$	0.010266	$0.010238 \pm 0.000099$
$100\theta_{\text{MC}}$	1.03993	$1.03998 \pm 0.00077$	$10^9 A_s$	2.021	$2.047^{+0.047}_{-0.084}$	$100\theta_{\text{eq}}$	0.8213	$0.8228 \pm 0.0058$
$\tau$	0.0324	$< 0.0475$	$10^9 A_s e^{-2\tau}$	1.8943	$1.889^{+0.023}_{-0.020}$	$100\theta_{s,\text{eq}}$	0.45306	$0.4539 \pm 0.0030$
$\ln(10^{10} A_s)$	3.0063	$3.018^{+0.024}_{-0.040}$	$D_{40}$	1242.8	$1239 \pm 31$	$r_{\text{drag}}/D_V(0.57)$	0.071902	$0.07200 \pm 0.00047$
$n_s$	0.9657	$0.967 \pm 0.011$	$D_{220}$	5877	$5855 \pm 120$	$H(0.57)$	93.46	$93.45 \pm 0.53$
$y_{\text{cal}}$	0.99976	$0.9998 \pm 0.0025$	$D_{810}$	2563.4	$2558 \pm 31$	$D_A(0.57)$	1376.6	$1376 \pm 12$
$A_{100}^{\text{dustEE}}$	0.0810	$0.0810 \pm 0.0060$	$D_{1420}$	827.2	$825 \pm 14$	$F_{\text{AP}}(0.57)$	0.67373	$0.6734 \pm 0.0022$
$A_{100 \times 143}^{\text{dustEE}}$	0.0478	$0.0481 \pm 0.0055$	$D_{2000}$	234.06	$233.5 \pm 4.9$	$f\sigma_8(0.57)$	0.4541	$0.4564^{+0.0080}_{-0.010}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0989	$0.0996 \pm 0.033$	$n_{s,0.002}$	0.9657	$0.967 \pm 0.011$	$\sigma_8(0.57)$	0.5861	$0.5898^{+0.0082}_{-0.013}$
$A_{143}^{\text{dustEE}}$	0.0989	$0.0993 \pm 0.0073$	$Y_P$	0.245680	$0.24564^{+0.00027}_{-0.00024}$	$\chi^2_{\text{lensing}}$	9.04	$10.0 \pm 1.4$
$A_{143 \times 217}^{\text{dustEE}}$	0.2218	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.247007	$0.24696^{+0.00027}_{-0.00024}$	$\chi^2_{\text{plikEE}}$	751.82	$758.1 \pm 3.9$
$A_{217}^{\text{dustEE}}$	0.649	$0.65 \pm 0.13$	$10^5 \text{D}/\text{H}$	2.473	$2.491^{+0.095}_{-0.11}$	$\chi^2_{\text{H070p6}}$	0.454	$0.49 \pm 0.32$
$H_0$	68.37	$68.43 \pm 0.80$	Age/Gyr	13.751	$13.757 \pm 0.065$	$\chi^2_{\text{JLA}}$	706.553	$706.60 \pm 0.14$
$\Omega_\Lambda$	0.6975	$0.6987^{+0.0093}_{-0.0084}$	$z_*$	1088.93	$1089.02 \pm 0.73$	$\chi^2_{6\text{DF}}$	0.0000	$0.051 \pm 0.073$
$\Omega_m$	0.3025	$0.3013 \pm 0.0086$	$r_*$	144.520	$144.66^{+0.45}_{-0.54}$	$\chi^2_{\text{MGS}}$	1.68	$1.89 \pm 0.68$
$\Omega_m h^2$	0.14139	$0.1410 \pm 0.0014$	$100\theta_*$	1.04005	$1.04011 \pm 0.00077$	$\chi^2_{\text{DR11CMass}}$	2.53	$3.12 \pm 0.89$
$\Omega_m h^3$	0.09667	$0.0965 \pm 0.0011$	$D_A/\text{Gpc}$	13.895	$13.908^{+0.047}_{-0.053}$	$\chi^2_{\text{DR11LOWZ}}$	0.293	$0.38 \pm 0.44$
$\sigma_8$	0.7850	$0.790^{+0.012}_{-0.017}$	$z_{\text{drag}}$	1061.27	$1061.1 \pm 1.3$	$\chi^2_{\text{prior}}$	3.60	$7.9 \pm 3.4$
$\sigma_8 \Omega_m^{0.5}$	0.4317	$0.433 \pm 0.011$	$r_{\text{drag}}$	146.97	$147.15^{+0.60}_{-0.70}$	$\chi^2_{\text{CMB}}$	760.86	$768.1 \pm 4.1$
$\sigma_8 \Omega_m^{0.25}$	0.5822	$0.585^{+0.011}_{-0.014}$	$k_D$	0.14147	$0.1412^{+0.0011}_{-0.00099}$	$\chi^2_{\text{BAO}}$	4.50	$5.4 \pm 1.4$
$\sigma_8/h^{0.5}$	0.9494	$0.955^{+0.017}_{-0.022}$	$100\theta_D$	0.15981	$0.15995^{+0.00070}_{-0.00081}$			

Best-fit  $\chi^2_{\text{eff}} = 1475.97$ ;  $\bar{\chi}^2_{\text{eff}} = 1488.50$ ;  $R - 1 = 0.01677$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.53 DR11LOWZ: 0.29 CMB - smica\_g30\_ftl\_full\_pp: 9.04 plik\_dx11dr2\_HM\_v18\_EE: 751.82 Hubble - H070p6: 0.45 SN  
- JLA December\_2013: 706.55

## 2.59 base\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022277	$0.02226 \pm 0.00023$	$\Omega_m h^2$	0.14135	$0.1415 \pm 0.0019$	$z_{\text{drag}}$	1059.589	$1059.57 \pm 0.47$
$\Omega_c h^2$	0.11843	$0.1186 \pm 0.0020$	$\Omega_m h^3$	0.095931	$0.09591 \pm 0.00045$	$r_{\text{drag}}$	147.614	$147.60 \pm 0.43$
$100\theta_{\text{MC}}$	1.041030	$1.04103 \pm 0.00046$	$\sigma_8$	0.8152	$0.8149 \pm 0.0093$	$k_D$	0.140247	$0.14024 \pm 0.00047$
$\tau$	0.0666	$0.066 \pm 0.016$	$\sigma_8 \Omega_m^{0.5}$	0.4516	$0.4521 \pm 0.0088$	$100\theta_D$	0.160954	$0.16098 \pm 0.00027$
$\ln(10^{10} A_s)$	3.0636	$3.062 \pm 0.029$	$\sigma_8 \Omega_m^{0.25}$	0.6068	$0.6069 \pm 0.0076$	$z_{\text{eq}}$	3362.4	$3365 \pm 44$
$n_s$	0.9683	$0.9677 \pm 0.0060$	$\sigma_8/h^{0.5}$	0.9896	$0.990 \pm 0.011$	$k_{\text{eq}}$	0.010263	$0.01027 \pm 0.00014$
$y_{\text{cal}}$	1.00012	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4469	$2.448 \pm 0.026$	$100\theta_{\text{eq}}$	0.8203	$0.8199 \pm 0.0086$
$A_{217}^{\text{CIB}}$	67.4	$64.5 \pm 6.6$	$z_{\text{re}}$	8.89	$8.7^{+1.7}_{-1.4}$	$100\theta_{\text{s,eq}}$	0.45311	$0.4529 \pm 0.0044$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.141	$2.139 \pm 0.063$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.07182 \pm 0.00069$
$A_{143}^{\text{tSZ}}$	7.21	$5.0 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8734	$1.874 \pm 0.013$	$H(0.57)$	93.085	$93.07 \pm 0.41$
$A_{100}^{\text{PS}}$	253.9	$260 \pm 28$	$D_{40}$	1224.6	$1226 \pm 13$	$D_A(0.57)$	1384.4	$1385 \pm 12$
$A_{143}^{\text{PS}}$	39.2	$44 \pm 8$	$D_{220}$	5717.1	$5717 \pm 41$	$F_{\text{AP}}(0.57)$	0.67486	$0.6751 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+10}_{-10}$	$D_{810}$	2532.5	$2532 \pm 14$	$f\sigma_8(0.57)$	0.4728	$0.4728 \pm 0.0053$
$A_{217}^{\text{PS}}$	97.3	$96 \pm 10$	$D_{1420}$	815.0	$814.5 \pm 5.1$	$\sigma_8(0.57)$	0.6076	$0.6072 \pm 0.0084$
$A^{\text{kSZ}}$	0.00	$< 4.92$	$D_{2000}$	230.22	$230.0 \pm 1.9$	$f_{2000}^{143}$	29.99	$30.4 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9683	$0.9677 \pm 0.0060$	$f_{2000}^{143 \times 217}$	32.58	$32.8 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.04	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245352	$0.24534 \pm 0.00011$	$f_{2000}^{217}$	106.15	$106.3 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.54	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.24667 \pm 0.00011$	$\chi_{\text{lensing}}^2$	9.18	$9.9 \pm 1.5$
$A_{217}^{\text{dustTT}}$	81.8	$81.8 \pm 7.4$	$10^5 D/H$	2.6089	$2.613 \pm 0.044$	$\chi_{\text{lowTEB}}^2$	10494.86	$10495.6 \pm 1.3$
$c_{100}$	0.99792	$0.99787 \pm 0.00078$	Age/Gyr	13.7970	$13.799 \pm 0.038$	$\chi_{\text{plik}}^2$	766.3	$779.4 \pm 5.5$
$c_{217}$	0.99597	$0.9960 \pm 0.0015$	$z_*$	1089.898	$1089.94 \pm 0.42$	$\chi_{\text{prior}}^2$	2.08	$7.4 \pm 3.6$
$H_0$	67.87	$67.81 \pm 0.92$	$r_*$	144.910	$144.89 \pm 0.44$	$\chi_{\text{CMB}}^2$	11270.4	$11284.9 \pm 5.5$
$\Omega_\Lambda$	0.6931	$0.692 \pm 0.012$	$100\theta_*$	1.041223	$1.04122 \pm 0.00045$			
$\Omega_m$	0.3069	$0.308 \pm 0.012$	$D_A/\text{Gpc}$	13.9173	$13.916 \pm 0.041$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.30$ ;  $R - 1 = 0.00803$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.18 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.86 plik\_dx11dr2\_HM\_v18.TT: 766.32

## 2.60 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022249	$0.02225 \pm 0.00020$	$\Omega_m h^3$	0.095911	$0.09591 \pm 0.00044$	$k_D$	0.140259	$0.14024 \pm 0.00042$
$\Omega_c h^2$	0.11867	$0.1186 \pm 0.0012$	$\sigma_8$	0.8153	$0.8150 \pm 0.0090$	$100\theta_D$	0.160983	$0.16099 \pm 0.00025$
$100\theta_{MC}$	1.041009	$1.04103 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	0.4527	$0.4523 \pm 0.0067$	$z_{eq}$	3367.4	$3366 \pm 28$
$\tau$	0.0654	$0.066 \pm 0.013$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.6071 \pm 0.0070$	$k_{eq}$	0.010278	$0.010274 \pm 0.000085$
$\ln(10^{10} A_s)$	3.0618	$3.062 \pm 0.024$	$\sigma_8/h^{0.5}$	0.9905	$0.990 \pm 0.011$	$100\theta_{eq}$	0.8193	$0.8196 \pm 0.0053$
$n_s$	0.96789	$0.9675 \pm 0.0045$	$\langle d^2 \rangle^{1/2}$	2.4480	$2.448 \pm 0.025$	$100\theta_{s,eq}$	0.45261	$0.4528 \pm 0.0027$
$y_{cal}$	1.00023	$1.0002 \pm 0.0025$	$z_{re}$	8.78	$8.8^{+1.3}_{-1.2}$	$r_{drag}/D_V(0.57)$	0.071767	$0.07179 \pm 0.00042$
$A_{217}^{CIB}$	67.6	$64.6 \pm 6.5$	$10^9 A_s$	2.136	$2.137 \pm 0.051$	$H(0.57)$	93.034	$93.05 \pm 0.28$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8746	$1.874 \pm 0.011$	$D_A(0.57)$	1385.9	$1385.5 \pm 7.7$
$A_{143}^{tSZ}$	7.25	$5.0 \pm 1.9$	$D_{40}$	1225.0	$1227 \pm 12$	$F_{AP}(0.57)$	0.67524	$0.6751 \pm 0.0019$
$A_{100}^{PS}$	253.4	$260 \pm 28$	$D_{220}$	5714.8	$5717 \pm 40$	$f\sigma_8(0.57)$	0.4732	$0.4729 \pm 0.0052$
$A_{143}^{PS}$	39.2	$44 \pm 8$	$D_{810}$	2533.1	$2532 \pm 14$	$\sigma_8(0.57)$	0.6073	$0.6071 \pm 0.0072$
$A_{143 \times 217}^{PS}$	32.8	$39^{+10}_{-10}$	$D_{1420}$	815.0	$814.5 \pm 5.0$	$f_{2000}^{143}$	30.04	$30.5 \pm 2.8$
$A_{217}^{PS}$	97.0	$96 \pm 10$	$D_{2000}$	230.18	$230.0 \pm 1.8$	$f_{2000}^{143 \times 217}$	32.68	$32.8 \pm 2.0$
$A^{kSZ}$	0.01	$< 4.95$	$n_{s,0.002}$	0.96789	$0.9675 \pm 0.0045$	$f_{2000}^{217}$	106.22	$106.4 \pm 2.0$
$A_{100}^{dustTT}$	7.51	$7.5 \pm 1.9$	$Y_P$	0.245339	$0.245337 \pm 0.000091$	$\chi_{lensing}^2$	9.24	$9.9 \pm 1.4$
$A_{143}^{dustTT}$	9.06	$9.0 \pm 1.8$	$Y_P^{BBN}$	0.246666	$0.246663 \pm 0.000091$	$\chi_{lowTEB}^2$	10494.86	$10495.4 \pm 1.0$
$A_{143 \times 217}^{dustTT}$	17.74	$17.2 \pm 4.1$	$10^5 D/H$	2.6142	$2.614 \pm 0.038$	$\chi_{plik}^2$	766.2	$779.0 \pm 5.4$
$A_{217}^{dustTT}$	82.0	$81.8 \pm 7.3$	$Age/Gyr$	13.8014	$13.800 \pm 0.029$	$\chi_{6DF}^2$	0.0101	$0.047 \pm 0.063$
$c_{100}$	0.99791	$0.99787 \pm 0.00078$	$z_*$	1089.955	$1089.95 \pm 0.31$	$\chi_{MGS}^2$	1.41	$1.51 \pm 0.56$
$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$r_*$	144.870	$144.89 \pm 0.30$	$\chi_{DR11CMass}^2$	2.402	$2.83 \pm 0.60$
$H_0$	67.75	$67.78 \pm 0.57$	$100\theta_*$	1.041206	$1.04122 \pm 0.00041$	$\chi_{DR11LOWZ}^2$	0.479	$0.58 \pm 0.51$
$\Omega_\Lambda$	0.6916	$0.6919 \pm 0.0074$	$D_A/Gpc$	13.9137	$13.915 \pm 0.029$	$\chi_{prior}^2$	2.15	$7.4 \pm 3.6$
$\Omega_m$	0.3084	$0.3081 \pm 0.0074$	$z_{drag}$	1059.551	$1059.55 \pm 0.44$	$\chi_{CMB}^2$	11270.3	$11284.3 \pm 5.4$
$\Omega_m h^2$	0.14156	$0.1415 \pm 0.0012$	$r_{drag}$	147.581	$147.60 \pm 0.33$	$\chi_{BAO}^2$	4.30	$4.97 \pm 0.89$

Best-fit  $\chi_{eff}^2 = 11276.74$ ;  $\bar{\chi}_{eff}^2 = 11296.69$ ;  $R - 1 = 0.00978$

$\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.40 DR11LOWZ: 0.48 CMB - smica\_g30\_ftl\_full\_pp: 9.24 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.86 plik\_dx11dr2\_HM\_v18\_TT: 766.20

## 2.61 base\_plikHM\_TT\_lowTEB\_lensing\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022286	$0.02228 \pm 0.00023$	$\Omega_m h^2$	0.14104	$0.1412 \pm 0.0017$	$z_{\text{drag}}$	1059.589	$1059.60 \pm 0.47$
$\Omega_c h^2$	0.11811	$0.1183 \pm 0.0019$	$\Omega_m h^3$	0.095922	$0.09592 \pm 0.00045$	$r_{\text{drag}}$	147.689	$147.64 \pm 0.41$
$100\theta_{\text{MC}}$	1.041092	$1.04106 \pm 0.00045$	$\sigma_8$	0.8170	$0.8153 \pm 0.0093$	$k_D$	0.140175	$0.14021 \pm 0.00046$
$\tau$	0.0704	$0.067 \pm 0.016$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.4512 \pm 0.0085$	$100\theta_D$	0.160962	$0.16097 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0701	$3.065 \pm 0.028$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.6065 \pm 0.0076$	$z_{\text{eq}}$	3355.0	$3360 \pm 42$
$n_s$	0.9689	$0.9683 \pm 0.0058$	$\sigma_8/h^{0.5}$	0.9907	$0.989 \pm 0.011$	$k_{\text{eq}}$	0.010240	$0.01025 \pm 0.00013$
$y_{\text{cal}}$	0.99991	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4503	$2.447 \pm 0.026$	$100\theta_{\text{eq}}$	0.8217	$0.8209 \pm 0.0081$
$A_{217}^{\text{CIB}}$	67.9	$64.5 \pm 6.6$	$z_{\text{re}}$	9.24	$8.9^{+1.6}_{-1.4}$	$100\theta_{\text{s,eq}}$	0.45385	$0.4534 \pm 0.0041$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.154	$2.144 \pm 0.061$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.07190 \pm 0.00065$
$A_{143}^{\text{tSZ}}$	6.82	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8713	$1.873 \pm 0.012$	$H(0.57)$	93.141	$93.11 \pm 0.39$
$A_{100}^{\text{PS}}$	257.9	$260 \pm 28$	$D_{40}$	1224.3	$1226 \pm 12$	$D_A(0.57)$	1382.5	$1384 \pm 12$
$A_{143}^{\text{PS}}$	40.0	$44 \pm 8$	$D_{220}$	5716.3	$5719 \pm 41$	$F_{\text{AP}}(0.57)$	0.67436	$0.6747 \pm 0.0029$
$A_{143 \times 217}^{\text{PS}}$	32.3	$39^{+10}_{-10}$	$D_{810}$	2530.9	$2532 \pm 14$	$f\sigma_8(0.57)$	0.4733	$0.4726 \pm 0.0054$
$A_{217}^{\text{PS}}$	95.8	$96 \pm 10$	$D_{1420}$	814.5	$814.7 \pm 5.1$	$\sigma_8(0.57)$	0.6094	$0.6078 \pm 0.0082$
$A^{\text{kSZ}}$	0.16	$< 4.85$	$D_{2000}$	230.14	$230.1 \pm 1.8$	$f_{2000}^{143}$	30.07	$30.3 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.31	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9689	$0.9683 \pm 0.0058$	$f_{2000}^{143 \times 217}$	32.42	$32.7 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.27	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245356	$0.24535 \pm 0.00010$	$f_{2000}^{217}$	105.86	$106.2 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.82	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668 \pm 0.00010$	$\chi_{\text{lensing}}^2$	9.25	$9.8 \pm 1.4$
$A_{217}^{\text{dustTT}}$	81.5	$81.7 \pm 7.3$	$10^5 D/H$	2.6072	$2.609 \pm 0.043$	$\chi_{\text{lowTEB}}^2$	10494.98	$10495.5 \pm 1.2$
$c_{100}$	0.99774	$0.99788 \pm 0.00078$	Age/Gyr	13.7927	$13.795 \pm 0.037$	$\chi_{\text{plik}}^2$	766.2	$779.4 \pm 5.5$
$c_{217}$	0.99586	$0.9960 \pm 0.0014$	$z_*$	1089.859	$1089.89 \pm 0.40$	$\chi_{\text{JLA}}^2$	706.593	$706.73 \pm 0.29$
$H_0$	68.01	$67.92 \pm 0.86$	$r_*$	144.986	$144.94 \pm 0.41$	$\chi_{\text{prior}}^2$	1.99	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6951	$0.694 \pm 0.011$	$100\theta_*$	1.041286	$1.04126 \pm 0.00044$	$\chi_{\text{CMB}}^2$	11270.5	$11284.8 \pm 5.5$
$\Omega_m$	0.3049	$0.306 \pm 0.011$	$D_A/\text{Gpc}$	13.9238	$13.920 \pm 0.039$			

Best-fit  $\chi_{\text{eff}}^2 = 11979.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11998.93$ ;  $R - 1 = 0.00900$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.25 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.98 plik\_dx11dr2\_HM\_v18.TT: 766.24 SN - JLA December\_2013: 706.59



## 2.62 base\_plikHM\_TT\_lowTEB\_lensing\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022298	$0.02229 \pm 0.00023$	$\Omega_m h^2$	0.14103	$0.1411 \pm 0.0018$	$z_{\text{drag}}$	1059.628	$1059.62 \pm 0.47$
$\Omega_c h^2$	0.11809	$0.1182 \pm 0.0019$	$\Omega_m h^3$	0.095932	$0.09594 \pm 0.00045$	$r_{\text{drag}}$	147.679	$147.67 \pm 0.42$
$100\theta_{\text{MC}}$	1.041073	$1.04109 \pm 0.00045$	$\sigma_8$	0.8156	$0.8156 \pm 0.0093$	$k_D$	0.140194	$0.14020 \pm 0.00046$
$\tau$	0.0687	$0.068 \pm 0.016$	$\sigma_8 \Omega_m^{0.5}$	0.4503	$0.4506 \pm 0.0086$	$100\theta_D$	0.160942	$0.16095 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0667	$3.067 \pm 0.029$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.6062 \pm 0.0076$	$z_{\text{eq}}$	3354.9	$3357 \pm 43$
$n_s$	0.9692	$0.9687 \pm 0.0059$	$\sigma_8/h^{0.5}$	0.9889	$0.989 \pm 0.011$	$k_{\text{eq}}$	0.010239	$0.01024 \pm 0.00013$
$y_{\text{cal}}$	0.99999	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4453	$2.447 \pm 0.026$	$100\theta_{\text{eq}}$	0.8218	$0.8216 \pm 0.0083$
$A_{217}^{\text{CIB}}$	67.4	$64.4 \pm 6.6$	$z_{\text{re}}$	9.08	$9.0^{+1.6}_{-1.4}$	$100\theta_{\text{s,eq}}$	0.45386	$0.4538 \pm 0.0042$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s$	2.147	$2.148 \pm 0.062$	$r_{\text{drag}}/D_V(0.57)$	0.07197	$0.07195 \pm 0.00066$
$A_{143}^{\text{tSZ}}$	7.14	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8714	$1.872 \pm 0.013$	$H(0.57)$	93.148	$93.15 \pm 0.40$
$A_{100}^{\text{PS}}$	254.7	$259 \pm 28$	$D_{40}$	1223.0	$1225 \pm 12$	$D_A(0.57)$	1382.4	$1383 \pm 12$
$A_{143}^{\text{PS}}$	39.2	$44 \pm 8$	$D_{220}$	5716.3	$5720 \pm 41$	$F_{\text{AP}}(0.57)$	0.67433	$0.6744 \pm 0.0030$
$A_{143 \times 217}^{\text{PS}}$	32.6	$38^{+10}_{-10}$	$D_{810}$	2531.5	$2532 \pm 14$	$f\sigma_8(0.57)$	0.4725	$0.4725 \pm 0.0054$
$A_{217}^{\text{PS}}$	97.0	$96 \pm 10$	$D_{1420}$	814.9	$814.9 \pm 5.1$	$\sigma_8(0.57)$	0.6083	$0.6083 \pm 0.0083$
$A^{\text{kSZ}}$	0.03	$< 4.81$	$D_{2000}$	230.26	$230.2 \pm 1.8$	$f_{2000}^{143}$	29.87	$30.2 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9692	$0.9687 \pm 0.0059$	$f_{2000}^{143 \times 217}$	32.45	$32.6 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.06	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245361	$0.24536 \pm 0.00010$	$f_{2000}^{217}$	106.03	$106.1 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.71	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246688	$0.24668 \pm 0.00010$	$\chi_{\text{lensing}}^2$	9.07	$9.8 \pm 1.4$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.3$	$10^5 D/H$	2.6049	$2.606 \pm 0.043$	$\chi_{\text{lowTEB}}^2$	10494.80	$10495.5 \pm 1.2$
$c_{100}$	0.99789	$0.99788 \pm 0.00078$	$\text{Age/Gyr}$	13.7920	$13.792 \pm 0.037$	$\chi_{\text{plik}}^2$	766.5	$779.5 \pm 5.6$
$c_{217}$	0.99604	$0.9960 \pm 0.0014$	$z_*$	1089.843	$1089.86 \pm 0.41$	$\chi_{\text{H070p6}}^2$	0.605	$0.68 \pm 0.42$
$H_0$	68.02	$68.00 \pm 0.88$	$r_*$	144.982	$144.97 \pm 0.42$	$\chi_{\text{prior}}^2$	2.13	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6952	$0.695 \pm 0.012$	$100\theta_*$	1.041268	$1.04128 \pm 0.00044$	$\chi_{\text{CMB}}^2$	11270.4	$11284.9 \pm 5.5$
$\Omega_m$	0.3048	$0.305 \pm 0.012$	$D_A/\text{Gpc}$	13.9236	$13.922 \pm 0.040$			

Best-fit  $\chi_{\text{eff}}^2 = 11273.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.96$ ;  $R - 1 = 0.00870$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.07 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.80 plik\_dx11dr2\_HM\_v18.TT: 766.50 Hubble - H070p6: 0.60

## 2.63 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022274	$0.02227 \pm 0.00020$	$\sigma_8$	0.8162	$0.8154 \pm 0.0090$	$z_{\text{eq}}$	3361.7	$3361 \pm 27$
$\Omega_c h^2$	0.11840	$0.1184 \pm 0.0012$	$\sigma_8 \Omega_m^{0.5}$	0.4520	$0.4514 \pm 0.0066$	$k_{\text{eq}}$	0.010260	$0.010258 \pm 0.000083$
$100\theta_{\text{MC}}$	1.041057	$1.04106 \pm 0.00041$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.6066 \pm 0.0070$	$100\theta_{\text{eq}}$	0.8205	$0.8206 \pm 0.0051$
$\tau$	0.0677	$0.067 \pm 0.013$	$\sigma_8/h^{0.5}$	0.9906	$0.989 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45319	$0.4533 \pm 0.0026$
$\ln(10^{10} A_s)$	3.0661	$3.064 \pm 0.024$	$\langle d^2 \rangle^{1/2}$	2.4496	$2.448 \pm 0.025$	$r_{\text{drag}}/D_V(0.57)$	0.071864	$0.07188 \pm 0.00041$
$n_s$	0.96829	$0.9681 \pm 0.0044$	$z_{\text{re}}$	8.99	$8.9^{+1.3}_{-1.2}$	$H(0.57)$	93.093	$93.10 \pm 0.27$
$y_{\text{cal}}$	1.00033	$1.0002 \pm 0.0025$	$10^9 A_s$	2.146	$2.143 \pm 0.051$	$D_A(0.57)$	1384.1	$1383.9 \pm 7.5$
$A_{217}^{\text{CIB}}$	67.7	$64.5 \pm 6.5$	$10^9 A_s e^{-2\tau}$	1.8741	$1.873 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67480	$0.6747 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.5	$1226 \pm 12$	$f\sigma_8(0.57)$	0.4733	$0.4727 \pm 0.0052$
$A_{143}^{\text{tSZ}}$	7.22	$5.1 \pm 1.9$	$D_{220}$	5719.7	$5719 \pm 40$	$\sigma_8(0.57)$	0.6084	$0.6078 \pm 0.0072$
$A_{100}^{\text{PS}}$	253.7	$259 \pm 28$	$D_{810}$	2533.4	$2532 \pm 14$	$f_{2000}^{143}$	29.96	$30.3 \pm 2.8$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$D_{1420}$	815.2	$814.7 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.57	$32.7 \pm 2.0$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$D_{2000}$	230.30	$230.1 \pm 1.8$	$f_{2000}^{217}$	106.15	$106.2 \pm 2.0$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$n_{\text{s},0.002}$	0.96829	$0.9681 \pm 0.0044$	$\chi_{\text{lensing}}^2$	9.26	$9.8 \pm 1.4$
$A^{\text{kSZ}}$	0.00	$< 4.85$	$Y_{\text{P}}$	0.245350	$0.245349 \pm 0.000090$	$\chi_{\text{lowTEB}}^2$	10494.92	$10495.4 \pm 1.1$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.246675 \pm 0.000090$	$\chi_{\text{plik}}^2$	766.1	$779.1 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.18	$9.0 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6095	$2.610 \pm 0.038$	$\chi_{\text{H070p6}}^2$	0.669	$0.69 \pm 0.27$
$A_{143 \times 217}^{\text{dustTT}}$	17.74	$17.2 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.7963	$13.796 \pm 0.029$	$\chi_{\text{JLA}}^2$	706.627	$706.67 \pm 0.16$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.3$	$z_*$	1089.900	$1089.90 \pm 0.30$	$\chi_{6\text{DF}}^2$	0.0030	$0.039 \pm 0.053$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$r_*$	144.920	$144.93 \pm 0.30$	$\chi_{\text{MGS}}^2$	1.54	$1.63 \pm 0.56$
$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$100\theta_*$	1.041254	$1.04126 \pm 0.00041$	$\chi_{\text{DR11CMass}}^2$	2.412	$2.82 \pm 0.58$
$H_0$	67.89	$67.90 \pm 0.55$	$D_A/\text{Gpc}$	13.9178	$13.919 \pm 0.029$	$\chi_{\text{DR11LOWZ}}^2$	0.370	$0.48 \pm 0.45$
$\Omega_\Lambda$	0.6933	$0.6935 \pm 0.0072$	$z_{\text{drag}}$	1059.589	$1059.60 \pm 0.44$	$\chi_{\text{prior}}^2$	2.13	$7.4 \pm 3.6$
$\Omega_m$	0.3067	$0.3065 \pm 0.0072$	$r_{\text{drag}}$	147.624	$147.63 \pm 0.32$	$\chi_{\text{CMB}}^2$	11270.3	$11284.3 \pm 5.4$
$\Omega_m h^2$	0.14132	$0.1413 \pm 0.0011$	$k_{\text{D}}$	0.140233	$0.14022 \pm 0.00042$	$\chi_{\text{BAO}}^2$	4.33	$4.96 \pm 0.88$
$\Omega_m h^3$	0.095934	$0.09593 \pm 0.00045$	$100\theta_{\text{D}}$	0.160965	$0.16097 \pm 0.00025$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.02$ ;  $R - 1 = 0.00967$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.41 DR11LOWZ: 0.37 CMB - smica\_g30\_ftl\_full\_pp: 9.26 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.92 plik\_dx11dr2\_HM\_v18\_TT: 766.13 Hubble - H070p6: 0.67 SN - JLA December\_2013: 706.63

## 2.64 base\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02227 \pm 0.00023$	$\Omega_m h^2$	$0.1413 \pm 0.0017$	$z_{\text{drag}}$	$1059.59 \pm 0.46$
$\Omega_c h^2$	$0.1183 \pm 0.0018$	$\Omega_m h^3$	$0.09592 \pm 0.00045$	$r_{\text{drag}}$	$147.64 \pm 0.41$
$100\theta_{\text{MC}}$	$1.04106 \pm 0.00044$	$\sigma_8$	$0.8162^{+0.0081}_{-0.0095}$	$k_{\text{D}}$	$0.14021 \pm 0.00046$
$\tau$	$0.068^{+0.012}_{-0.018}$	$\sigma_8 \Omega_m^{0.5}$	$0.4517 \pm 0.0087$	$100\theta_{\text{D}}$	$0.16097 \pm 0.00026$
$\ln(10^{10} A_s)$	$3.067^{+0.023}_{-0.030}$	$\sigma_8 \Omega_m^{0.25}$	$0.6072 \pm 0.0076$	$z_{\text{eq}}$	$3360 \pm 41$
$n_s$	$0.9683^{+0.0054}_{-0.0061}$	$\sigma_8/h^{0.5}$	$0.990 \pm 0.011$	$k_{\text{eq}}$	$0.01026 \pm 0.00013$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.450 \pm 0.025$	$100\theta_{\text{eq}}$	$0.8208 \pm 0.0079$
$A_{217}^{\text{CIB}}$	$64.5 \pm 6.5$	$z_{\text{re}}$	$9.0^{+1.3}_{-1.5}$	$100\theta_{\text{s,eq}}$	$0.4534 \pm 0.0041$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.148^{+0.047}_{-0.067}$	$r_{\text{drag}}/D_V(0.57)$	$0.07189^{+0.00061}_{-0.00069}$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.873 \pm 0.012$	$H(0.57)$	$93.11^{+0.36}_{-0.43}$
$A_{100}^{\text{PS}}$	$260 \pm 28$	$D_{40}$	$1226 \pm 12$	$D_A(0.57)$	$1384^{+12}_{-11}$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{220}$	$5717 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6747 \pm 0.0028$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{810}$	$2532 \pm 14$	$f\sigma_8(0.57)$	$0.4731 \pm 0.0053$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$D_{1420}$	$814.6 \pm 5.1$	$\sigma_8(0.57)$	$0.6084^{+0.0066}_{-0.0086}$
$A^{\text{kSZ}}$	$< 4.84$	$D_{2000}$	$230.1 \pm 1.8$	$f_{2000}^{143}$	$30.3 \pm 2.9$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	$0.9683^{+0.0054}_{-0.0061}$	$f_{2000}^{143 \times 217}$	$32.7 \pm 2.1$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$Y_{\text{P}}$	$0.24535 \pm 0.00010$	$f_{2000}^{217}$	$106.2 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	$0.24667 \pm 0.00010$	$\chi^2_{\text{lensing}}$	$9.9 \pm 1.5$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.3$	$10^5 \text{D}/\text{H}$	$2.610 \pm 0.043$	$\chi^2_{\text{lowTEB}}$	$10495.5 \pm 1.2$
$c_{100}$	$0.99788 \pm 0.00078$	$\text{Age}/\text{Gyr}$	$13.796^{+0.039}_{-0.035}$	$\chi^2_{\text{plik}}$	$779.3 \pm 5.5$
$c_{217}$	$0.9960 \pm 0.0014$	$z_*$	$1089.90^{+0.43}_{-0.38}$	$\chi^2_{\text{prior}}$	$7.4 \pm 3.5$
$H_0$	$67.92^{+0.81}_{-0.93}$	$r_*$	$144.94 \pm 0.41$	$\chi^2_{\text{CMB}}$	$11284.7 \pm 5.4$
$\Omega_\Lambda$	$0.694 \pm 0.011$	$100\theta_*$	$1.04126 \pm 0.00043$		
$\Omega_m$	$0.306 \pm 0.011$	$D_{\text{A}}/\text{Gpc}$	$13.919 \pm 0.038$		

$$\bar{\chi}^2_{\text{eff}} = 11292.06; R - 1 = 0.01013$$

## 2.65 base\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02225 \pm 0.00020$	$\Omega_m h^3$	$0.09591 \pm 0.00045$	$k_D$	$0.14023 \pm 0.00042$
$\Omega_c h^2$	$0.1186 \pm 0.0012$	$\sigma_8$	$0.8157^{+0.0082}_{-0.0093}$	$100\theta_D$	$0.16099 \pm 0.00025$
$100\theta_{MC}$	$1.04104 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	$0.4524 \pm 0.0067$	$z_{eq}$	$3365 \pm 27$
$\tau$	$0.067^{+0.011}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	$0.6075 \pm 0.0069$	$k_{eq}$	$0.010270 \pm 0.000084$
$\ln(10^{10} A_s)$	$3.064^{+0.021}_{-0.025}$	$\sigma_8/h^{0.5}$	$0.991 \pm 0.010$	$100\theta_{eq}$	$0.8198 \pm 0.0052$
$n_s$	$0.9676 \pm 0.0044$	$\langle d^2 \rangle^{1/2}$	$2.450 \pm 0.024$	$100\theta_{s,eq}$	$0.4529 \pm 0.0027$
$y_{cal}$	$1.0001 \pm 0.0025$	$z_{re}$	$8.9 \pm 1.1$	$r_{drag}/D_V(0.57)$	$0.07181 \pm 0.00041$
$A_{217}^{CIB}$	$64.6 \pm 6.5$	$10^9 A_s$	$2.142^{+0.045}_{-0.054}$	$H(0.57)$	$93.06 \pm 0.27$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.874 \pm 0.011$	$D_A(0.57)$	$1385.2 \pm 7.5$
$A_{143}^{tSZ}$	$5.1 \pm 1.9$	$D_{40}$	$1226 \pm 12$	$F_{AP}(0.57)$	$0.6751 \pm 0.0018$
$A_{100}^{PS}$	$260 \pm 27$	$D_{220}$	$5717 \pm 40$	$f\sigma_8(0.57)$	$0.4732 \pm 0.0050$
$A_{143}^{PS}$	$44 \pm 8$	$D_{810}$	$2532 \pm 14$	$\sigma_8(0.57)$	$0.6077^{+0.0065}_{-0.0075}$
$A_{143 \times 217}^{PS}$	$39^{+10}_{-10}$	$D_{1420}$	$814.5 \pm 5.0$	$f_{2000}^{143}$	$30.5 \pm 2.8$
$A_{217}^{PS}$	$96 \pm 10$	$D_{2000}$	$230.0 \pm 1.8$	$f_{2000}^{143 \times 217}$	$32.8 \pm 2.0$
$A^{kSZ}$	$< 4.92$	$n_{s,0.002}$	$0.9676 \pm 0.0044$	$f_{2000}^{217}$	$106.3 \pm 1.9$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P$	$0.245339 \pm 0.000090$	$\chi_{lensing}^2$	$9.9 \pm 1.5$
$A_{143}^{dustTT}$	$9.0 \pm 1.8$	$Y_P^{BBN}$	$0.246665 \pm 0.000091$	$\chi_{lowTEB}^2$	$10495.4 \pm 1.0$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.1$	$10^5 D/H$	$2.614 \pm 0.038$	$\chi_{plik}^2$	$778.9 \pm 5.4$
$A_{217}^{dustTT}$	$81.7 \pm 7.3$	$Age/Gyr$	$13.800 \pm 0.029$	$\chi_{6DF}^2$	$0.043 \pm 0.058$
$c_{100}$	$0.99788 \pm 0.00078$	$z_*$	$1089.94 \pm 0.30$	$\chi_{MGS}^2$	$1.54 \pm 0.55$
$c_{217}$	$0.9960 \pm 0.0014$	$r_*$	$144.90 \pm 0.30$	$\chi_{DR11CMass}^2$	$2.81 \pm 0.57$
$H_0$	$67.81 \pm 0.55$	$100\theta_*$	$1.04123 \pm 0.00040$	$\chi_{DR11LOWZ}^2$	$0.55 \pm 0.48$
$\Omega_\Lambda$	$0.6923 \pm 0.0072$	$D_A/Gpc$	$13.916 \pm 0.029$	$\chi_{prior}^2$	$7.4 \pm 3.6$
$\Omega_m$	$0.3077 \pm 0.0072$	$z_{drag}$	$1059.56 \pm 0.44$	$\chi_{CMB}^2$	$11284.2 \pm 5.4$
$\Omega_m h^2$	$0.1415 \pm 0.0011$	$r_{drag}$	$147.61 \pm 0.32$	$\chi_{BAO}^2$	$4.94 \pm 0.85$

$$\bar{\chi}_{eff}^2 = 11296.53; R - 1 = 0.01108$$

## 2.66 base\_plikHM\_TT\_lowTEB\_lensing\_post\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022176	$0.02218 \pm 0.00021$	$\Omega_m h^2$	0.14257	$0.1423 \pm 0.0014$	$z_{\text{drag}}$	1059.475	$1059.46 \pm 0.45$
$\Omega_c h^2$	0.11975	$0.1195 \pm 0.0015$	$\Omega_m h^3$	0.095887	$0.09588 \pm 0.00045$	$r_{\text{drag}}$	147.373	$147.43 \pm 0.37$
$100\theta_{\text{MC}}$	1.040838	$1.04089 \pm 0.00041$	$\sigma_8$	0.8089	$0.8095 \pm 0.0062$	$k_{\text{D}}$	0.140419	$0.14036 \pm 0.00044$
$\tau$	0.0526	$0.0547^{+0.0056}_{-0.0094}$	$\sigma_8 \Omega_m^{0.5}$	0.4541	$0.4535 \pm 0.0085$	$100\theta_{\text{D}}$	0.161025	$0.16103 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0390	$3.043^{+0.012}_{-0.017}$	$\sigma_8 \Omega_m^{0.25}$	0.6061	$0.6059 \pm 0.0075$	$z_{\text{eq}}$	3391.6	$3386 \pm 34$
$n_s$	0.96477	$0.9648 \pm 0.0046$	$\sigma_8/h^{0.5}$	0.9864	$0.986 \pm 0.010$	$k_{\text{eq}}$	0.010352	$0.01033 \pm 0.00010$
$y_{\text{cal}}$	1.00029	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4381	$2.440 \pm 0.024$	$100\theta_{\text{eq}}$	0.8146	$0.8157^{+0.0062}_{-0.0069}$
$A_{217}^{\text{CIB}}$	67.7	$65.0 \pm 6.5$	$z_{\text{re}}$	7.54	$7.74^{+0.57}_{-0.93}$	$100\theta_{\text{s,eq}}$	0.45020	$0.4508 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.0885	$2.096^{+0.025}_{-0.035}$	$r_{\text{drag}}/D_V(0.57)$	0.07139	$0.07147^{+0.00048}_{-0.00055}$
$A_{143}^{\text{tSZ}}$	7.11	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8800	$1.879 \pm 0.011$	$H(0.57)$	92.828	$92.87^{+0.30}_{-0.34}$
$A_{100}^{\text{PS}}$	256.1	$262 \pm 28$	$D_{40}$	1228.4	$1229 \pm 12$	$D_A(0.57)$	1392.5	$1391^{+10}_{-8.8}$
$A_{143}^{\text{PS}}$	40.9	$45 \pm 8$	$D_{220}$	5714.9	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67697	$0.6766 \pm 0.0023$
$A_{143 \times 217}^{\text{PS}}$	33.9	$39^{+10}_{-10}$	$D_{810}$	2535.3	$2534 \pm 13$	$f\sigma_8(0.57)$	0.47124	$0.4712 \pm 0.0049$
$A_{217}^{\text{PS}}$	97.9	$96 \pm 10$	$D_{1420}$	814.8	$814.4 \pm 5.2$	$\sigma_8(0.57)$	0.60088	$0.6017^{+0.0039}_{-0.0049}$
$A^{\text{kSZ}}$	0.02	$< 5.18$	$D_{2000}$	229.79	$229.6 \pm 1.8$	$f_{2000}^{143}$	30.65	$31.1 \pm 2.7$
$A_{100}^{\text{dustTT}}$	7.45	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.96477	$0.9648 \pm 0.0046$	$f_{2000}^{143 \times 217}$	33.17	$33.3 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245306	$0.245306 \pm 0.000095$	$f_{2000}^{217}$	106.67	$106.8 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.77	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246632	$0.246633 \pm 0.000096$	$\chi_{\text{lensing}}^2$	9.00	$9.6 \pm 1.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.3$	$10^5 D/H$	2.6281	$2.627 \pm 0.040$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.5 \pm 1.0$
$c_{100}$	0.99792	$0.99788 \pm 0.00079$	$\text{Age/Gyr}$	13.8184	$13.815 \pm 0.031$	$\chi_{\text{plik}}^2$	766.9	$779.5 \pm 5.4$
$c_{217}$	0.99602	$0.9961 \pm 0.0014$	$z_*$	1090.143	$1090.12 \pm 0.34$	$\chi_{\text{prior}}^2$	2.34	$8.5 \pm 3.8$
$H_0$	67.26	$67.36^{+0.65}_{-0.75}$	$r_*$	144.644	$144.70 \pm 0.35$	$\chi_{\text{CMB}}^2$	11271.2	$11284.6 \pm 5.3$
$\Omega_{\Lambda}$	0.6848	$0.6862 \pm 0.0092$	$100\theta_*$	1.041048	$1.04109 \pm 0.00040$			
$\Omega_{\text{m}}$	0.3152	$0.3138 \pm 0.0092$	$D_{\text{A}}/\text{Gpc}$	13.8941	$13.899 \pm 0.034$			

Best-fit  $\chi_{\text{eff}}^2 = 11273.51$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.12$ ;  $R - 1 = 0.01693$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.00 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.29 plik\_dx11dr2\_HM\_v18.TT: 766.87

## 2.67 base\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022274	$0.02226 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$z_*$	1089.966	$1090.00 \pm 0.29$
$\Omega_c h^2$	0.11913	$0.1193 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.338 \pm 0.080$	$r_*$	144.730	$144.71 \pm 0.31$
$100\theta_{\text{MC}}$	1.040867	$1.04087 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.662	$1.66 \pm 0.25$	$100\theta_*$	1.041062	$1.04106 \pm 0.00031$
$\tau$	0.0639	$0.063 \pm 0.014$	$c_{100}$	0.99816	$0.99813 \pm 0.00077$	$D_A/\text{Gpc}$	13.9022	$13.900 \pm 0.029$
$\ln(10^{10} A_s)$	3.0600	$3.059 \pm 0.025$	$c_{217}$	0.99606	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.62 \pm 0.31$
$n_s$	0.96597	$0.9653 \pm 0.0048$	$H_0$	67.56	$67.51 \pm 0.64$	$r_{\text{drag}}$	147.428	$147.41 \pm 0.30$
$y_{\text{cal}}$	0.99995	$1.0001 \pm 0.0024$	$\Omega_\Lambda$	0.6888	$0.6879 \pm 0.0087$	$k_D$	0.140437	$0.14044 \pm 0.00032$
$A_{217}^{\text{CIB}}$	67.7	$64.7 \pm 6.6$	$\Omega_m$	0.3112	$0.3121 \pm 0.0087$	$100\theta_D$	0.160911	$0.16093 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.14205	$0.1422 \pm 0.0013$	$z_{\text{eq}}$	3379.1	$3382 \pm 32$
$A_{143}^{\text{tSZ}}$	7.31	$5.3 \pm 1.9$	$\Omega_m h^3$	0.095971	$0.09596 \pm 0.00030$	$k_{\text{eq}}$	0.010313	$0.010322 \pm 0.000096$
$A_{100}^{\text{PS}}$	256.8	$262 \pm 28$	$\sigma_8$	0.8153	$0.8150 \pm 0.0087$	$100\theta_{\text{eq}}$	0.8171	$0.8166 \pm 0.0060$
$A_{143}^{\text{PS}}$	38.7	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4548	$0.4553 \pm 0.0068$	$100\theta_{\text{s,eq}}$	0.45146	$0.4512 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.6091 \pm 0.0067$	$r_{\text{drag}}/D_V(0.57)$	0.071593	$0.07156 \pm 0.00048$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9919	$0.992 \pm 0.010$	$H(0.57)$	92.971	$92.95 \pm 0.28$
$A^{\text{kSZ}}$	0.01	$< 4.62$	$\langle d^2 \rangle^{1/2}$	2.4545	$2.455 \pm 0.024$	$D_A(0.57)$	1388.3	$1389.1 \pm 8.5$
$A_{100}^{\text{dust}TT}$	7.58	$7.5 \pm 1.9$	$z_{\text{re}}$	8.64	$8.5_{-1.2}^{+1.4}$	$F_{\text{AP}}(0.57)$	0.67595	$0.6762 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	9.06	$9.0 \pm 1.8$	$10^9 A_s$	2.133	$2.130 \pm 0.053$	$f\sigma_8(0.57)$	0.47395	$0.4740 \pm 0.0049$
$A_{143 \times 217}^{\text{dust}TT}$	17.66	$17.2 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8769	$1.878 \pm 0.011$	$\sigma_8(0.57)$	0.6066	$0.6062 \pm 0.0073$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$D_{40}$	1229.6	$1232 \pm 12$	$f_{2000}^{143}$	29.78	$30.2 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0814 \pm 0.0056$	$D_{220}$	5722.8	$5725 \pm 38$	$f_{2000}^{143 \times 217}$	32.54	$32.8 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04917	$0.0490 \pm 0.0050$	$D_{810}$	2533.3	$2534 \pm 13$	$f_{2000}^{217}$	106.05	$106.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.0997 \pm 0.032$	$D_{1420}$	814.65	$814.6 \pm 4.7$	$\chi_{\text{lensing}}^2$	9.78	$10.4 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1004 \pm 0.0069$	$D_{2000}$	230.06	$230.0 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.9 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.224 \pm 0.046$	$n_{\text{s},0.002}$	0.96597	$0.9653 \pm 0.0048$	$\chi_{\text{plik}}^2$	2434.9	$2453.4 \pm 6.7$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245350	$0.245342 \pm 0.000071$	$\chi_{\text{prior}}^2$	7.2	$19.4 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1401	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.246668 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12940.0	$12959.7 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.132 \pm 0.029$	$10^5 D/H$	2.6095	$2.613 \pm 0.030$			
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.084$	Age/Gyr	13.8051	$13.807 \pm 0.026$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.12$ ;  $R - 1 = 0.01038$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.78 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.29 plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.91

## 2.68 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022283	$0.02228 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.337 \pm 0.080$	$100\theta_*$	1.041087	$1.04110 \pm 0.00030$
$\Omega_c h^2$	0.11893	$0.1190 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.666	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.9062	$13.906 \pm 0.023$
$100\theta_{\text{MC}}$	1.040889	$1.04090 \pm 0.00030$	$c_{100}$	0.99821	$0.99813 \pm 0.00077$	$z_{\text{drag}}$	1059.666	$1059.65 \pm 0.30$
$\tau$	0.0649	$0.065 \pm 0.012$	$c_{217}$	0.99606	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	147.472	$147.47 \pm 0.25$
$\ln(10^{10} A_s)$	3.0616	$3.062 \pm 0.023$	$H_0$	67.651	$67.64 \pm 0.47$	$k_D$	0.140398	$0.14040 \pm 0.00029$
$n_s$	0.96654	$0.9661 \pm 0.0041$	$\Omega_\Lambda$	0.6900	$0.6899 \pm 0.0064$	$100\theta_D$	0.160909	$0.16092 \pm 0.00017$
$y_{\text{cal}}$	0.99996	$1.0002 \pm 0.0024$	$\Omega_m$	0.3100	$0.3101 \pm 0.0064$	$z_{\text{eq}}$	3374.4	$3375 \pm 24$
$A_{217}^{\text{CIB}}$	67.5	$64.7 \pm 6.6$	$\Omega_m h^2$	0.14185	$0.14188 \pm 0.00099$	$k_{\text{eq}}$	0.010299	$0.010301 \pm 0.000072$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^3$	0.095965	$0.09597 \pm 0.00029$	$100\theta_{\text{eq}}$	0.81802	$0.8179 \pm 0.0045$
$A_{143}^{\text{tSZ}}$	7.36	$5.3 \pm 1.9$	$\sigma_8$	0.8154	$0.8156 \pm 0.0086$	$100\theta_{\text{s,eq}}$	0.45191	$0.4519 \pm 0.0023$
$A_{100}^{\text{PS}}$	257.5	$262 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.4542 \pm 0.0060$	$r_{\text{drag}}/D_V(0.57)$	0.071663	$0.07166 \pm 0.00035$
$A_{143}^{\text{PS}}$	38.4	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.6086 \pm 0.0065$	$H(0.57)$	93.005	$93.00 \pm 0.22$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39_{-10}^{+10}$	$\sigma_8/h^{0.5}$	0.9914	$0.992 \pm 0.010$	$D_A(0.57)$	1387.2	$1387.3 \pm 6.4$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4532	$2.455 \pm 0.024$	$F_{\text{AP}}(0.57)$	0.67564	$0.6757 \pm 0.0016$
$A^{\text{kSZ}}$	0.00	$< 4.50$	$z_{\text{re}}$	8.73	$8.7_{-1.1}^{+1.2}$	$f\sigma_8(0.57)$	0.47371	$0.4738 \pm 0.0049$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$10^9 A_s$	2.1361	$2.138 \pm 0.049$	$\sigma_8(0.57)$	0.6070	$0.6071 \pm 0.0068$
$A_{143}^{\text{dust}TT}$	9.03	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8761	$1.877 \pm 0.011$	$f_{2000}^{143}$	29.71	$30.1 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.73	$17.2 \pm 4.1$	$D_{40}$	1228.7	$1231 \pm 11$	$f_{2000}^{143 \times 217}$	32.49	$32.7 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.2	$81.6 \pm 7.4$	$D_{220}$	5722.9	$5726 \pm 38$	$f_{2000}^{217}$	106.05	$106.2 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0815 \pm 0.0057$	$D_{810}$	2533.2	$2534 \pm 13$	$\chi_{\text{lensing}}^2$	9.67	$10.4 \pm 1.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.04934	$0.0490 \pm 0.0050$	$D_{1420}$	814.77	$814.8 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	10495.21	$10495.7 \pm 1.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.0999 \pm 0.032$	$D_{2000}$	230.12	$230.1 \pm 1.5$	$\chi_{\text{plik}}^2$	2435.3	$2453.3 \pm 6.7$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1006 \pm 0.0069$	$n_{\text{s},0.002}$	0.96654	$0.9661 \pm 0.0041$	$\chi_{6\text{DF}}^2$	0.0216	$0.050 \pm 0.063$
$A_{143 \times 217}^{\text{dust}EE}$	0.2244	$0.225 \pm 0.046$	$Y_{\text{P}}$	0.245355	$0.245352 \pm 0.000063$	$\chi_{\text{MGS}}^2$	1.279	$1.33 \pm 0.45$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246681	$0.246678 \pm 0.000064$	$\chi_{\text{DR11CMass}}^2$	2.451	$2.76 \pm 0.50$
$A_{100}^{\text{dust}TE}$	0.1417	$0.141 \pm 0.038$	$10^5 D/H$	2.6077	$2.609 \pm 0.026$	$\chi_{\text{DR11LOWZ}}^2$	0.608	$0.71 \pm 0.50$
$A_{100 \times 143}^{\text{dust}TE}$	0.1306	$0.132 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.8026	$13.803 \pm 0.021$	$\chi_{\text{prior}}^2$	7.0	$19.4 \pm 5.4$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.302 \pm 0.085$	$z_*$	1089.935	$1089.94 \pm 0.23$	$\chi_{\text{CMB}}^2$	12940.2	$12959.4 \pm 6.6$
$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.053$	$r_*$	144.776	$144.77 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.359	$4.86 \pm 0.73$

Best-fit  $\chi_{\text{eff}}^2 = 12951.58$ ;  $\bar{\chi}_{\text{eff}}^2 = 12983.64$ ;  $R - 1 = 0.01558$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.67 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.21 plik\_dx11dr2\_HM\_v18\_TTT 2435.30

## 2.69 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022276	$0.02227 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.053$	$z_*$	1089.953	$1089.96 \pm 0.28$
$\Omega_c h^2$	0.11902	$0.1191 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.080$	$r_*$	144.756	$144.74 \pm 0.30$
$100\theta_{\text{MC}}$	1.040866	$1.04089 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.665	$1.66 \pm 0.26$	$100\theta_*$	1.041064	$1.04108 \pm 0.00031$
$\tau$	0.0639	$0.064 \pm 0.014$	$c_{100}$	0.99815	$0.99813 \pm 0.00077$	$D_A/\text{Gpc}$	13.9047	$13.903 \pm 0.028$
$\ln(10^{10} A_s)$	3.0599	$3.061 \pm 0.025$	$c_{217}$	0.99608	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.64 \pm 0.31$
$n_s$	0.96619	$0.9658 \pm 0.0047$	$H_0$	67.60	$67.59 \pm 0.62$	$r_{\text{drag}}$	147.454	$147.44 \pm 0.29$
$y_{\text{cal}}$	0.99999	$1.0002 \pm 0.0024$	$\Omega_\Lambda$	0.6894	$0.6890 \pm 0.0084$	$k_D$	0.140411	$0.14042 \pm 0.00031$
$A_{217}^{\text{CIB}}$	67.8	$64.7 \pm 6.6$	$\Omega_m$	0.3106	$0.3110 \pm 0.0084$	$100\theta_D$	0.160912	$0.16092 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14194	$0.1420 \pm 0.0013$	$z_{\text{eq}}$	3376.6	$3378 \pm 31$
$A_{143}^{\text{tSZ}}$	7.31	$5.3 \pm 1.9$	$\Omega_m h^3$	0.095957	$0.09597 \pm 0.00029$	$k_{\text{eq}}$	0.010306	$0.010310 \pm 0.000094$
$A_{100}^{\text{PS}}$	258.2	$262 \pm 28$	$\sigma_8$	0.8150	$0.8153 \pm 0.0087$	$100\theta_{\text{eq}}$	0.8176	$0.8174 \pm 0.0059$
$A_{143}^{\text{PS}}$	38.5	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4542	$0.4546 \pm 0.0068$	$100\theta_{\text{s,eq}}$	0.45170	$0.4516 \pm 0.0030$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.6088 \pm 0.0067$	$r_{\text{drag}}/D_V(0.57)$	0.071626	$0.07162 \pm 0.00047$
$A_{217}^{\text{PS}}$	96.5	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9912	$0.992 \pm 0.010$	$H(0.57)$	92.984	$92.98 \pm 0.27$
$A^{\text{kSZ}}$	0.00	$< 4.51$	$\langle d^2 \rangle^{1/2}$	2.4528	$2.455 \pm 0.025$	$D_A(0.57)$	1387.8	$1388.0 \pm 8.3$
$A_{100}^{\text{dust}TT}$	7.42	$7.5 \pm 1.9$	$z_{\text{re}}$	8.64	$8.6_{-1.2}^{+1.4}$	$F_{\text{AP}}(0.57)$	0.67580	$0.6759 \pm 0.0021$
$A_{143}^{\text{dust}TT}$	9.10	$9.0 \pm 1.8$	$10^9 A_s$	2.132	$2.135 \pm 0.053$	$f\sigma_8(0.57)$	0.47359	$0.4739 \pm 0.0049$
$A_{143 \times 217}^{\text{dust}TT}$	17.66	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877 \pm 0.011$	$\sigma_8(0.57)$	0.6065	$0.6067 \pm 0.0073$
$A_{217}^{\text{dust}TT}$	81.8	$81.6 \pm 7.4$	$D_{40}$	1229.2	$1231 \pm 12$	$f_{2000}^{143}$	29.78	$30.1 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0815 \pm 0.0057$	$D_{220}$	5723.3	$5726 \pm 38$	$f_{2000}^{143 \times 217}$	32.52	$32.7 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04917	$0.0489 \pm 0.0050$	$D_{810}$	2533.3	$2534 \pm 13$	$f_{2000}^{217}$	106.09	$106.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.0999 \pm 0.032$	$D_{1420}$	814.69	$814.7 \pm 4.7$	$\chi_{\text{lensing}}^2$	9.66	$10.4 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1005 \pm 0.0069$	$D_{2000}$	230.07	$230.1 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.23	$10495.8 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2252	$0.224 \pm 0.046$	$n_{\text{s},0.002}$	0.96619	$0.9658 \pm 0.0047$	$\chi_{\text{plik}}^2$	2435.1	$2453.5 \pm 6.8$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245351	$0.245348 \pm 0.000070$	$\chi_{\text{JLA}}^2$	706.723	$706.79 \pm 0.25$
$A_{100}^{\text{dust}TE}$	0.1422	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.246674 \pm 0.000070$	$\chi_{\text{prior}}^2$	7.2	$19.4 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132 \pm 0.029$	$10^5 D/H$	2.6091	$2.610 \pm 0.029$	$\chi_{\text{CMB}}^2$	12940.0	$12959.7 \pm 6.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.302 \pm 0.085$	Age/Gyr	13.8044	$13.804 \pm 0.025$			

Best-fit  $\chi_{\text{eff}}^2 = 13653.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 13685.92$ ;  $R - 1 = 0.01520$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.66 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.24 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.13 SN - JLA December\_2013: 706.72



## 2.70 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022294	$0.02228 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.053$	$z_*$	1089.924	$1089.95 \pm 0.29$
$\Omega_c h^2$	0.11896	$0.1190 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.337 \pm 0.080$	$r_*$	144.760	$144.75 \pm 0.30$
$100\theta_{\text{MC}}$	1.040889	$1.04090 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.668	$1.66 \pm 0.26$	$100\theta_*$	1.041083	$1.04109 \pm 0.00031$
$\tau$	0.0649	$0.064 \pm 0.014$	$c_{100}$	0.99816	$0.99813 \pm 0.00077$	$D_A/\text{Gpc}$	13.9047	$13.904 \pm 0.028$
$\ln(10^{10} A_s)$	3.0617	$3.061 \pm 0.025$	$c_{217}$	0.99602	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.65 \pm 0.31$
$n_s$	0.96647	$0.9660 \pm 0.0047$	$H_0$	67.65	$67.62 \pm 0.63$	$r_{\text{drag}}$	147.454	$147.45 \pm 0.30$
$y_{\text{cal}}$	0.99997	$1.0002 \pm 0.0024$	$\Omega_\Lambda$	0.6899	$0.6894 \pm 0.0085$	$k_D$	0.140428	$0.14042 \pm 0.00032$
$A_{217}^{\text{CIB}}$	67.7	$64.6 \pm 6.6$	$\Omega_m$	0.3101	$0.3106 \pm 0.0085$	$100\theta_D$	0.160893	$0.16091 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14190	$0.1420 \pm 0.0013$	$z_{\text{eq}}$	3375.5	$3377 \pm 31$
$A_{143}^{\text{tSZ}}$	7.38	$5.3 \pm 1.9$	$\Omega_m h^3$	0.095989	$0.09597 \pm 0.00029$	$k_{\text{eq}}$	0.010302	$0.010306 \pm 0.000095$
$A_{100}^{\text{PS}}$	255.7	$262 \pm 28$	$\sigma_8$	0.8155	$0.8154 \pm 0.0087$	$100\theta_{\text{eq}}$	0.8179	$0.8176 \pm 0.0060$
$A_{143}^{\text{PS}}$	38.1	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4541	$0.4544 \pm 0.0068$	$100\theta_{\text{s,eq}}$	0.45182	$0.4517 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	32.3	$39_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.6087 \pm 0.0067$	$r_{\text{drag}}/D_V(0.57)$	0.071655	$0.07164 \pm 0.00047$
$A_{217}^{\text{PS}}$	96.4	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9915	$0.992 \pm 0.010$	$H(0.57)$	93.009	$93.00 \pm 0.28$
$A^{\text{kSZ}}$	0.00	$< 4.49$	$\langle d^2 \rangle^{1/2}$	2.4537	$2.455 \pm 0.025$	$D_A(0.57)$	1387.2	$1387.6 \pm 8.4$
$A_{100}^{\text{dust}TT}$	7.45	$7.5 \pm 1.9$	$z_{\text{re}}$	8.73	$8.6_{-1.2}^{+1.4}$	$F_{\text{AP}}(0.57)$	0.67567	$0.6758 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	9.07	$9.0 \pm 1.8$	$10^9 A_s$	2.136	$2.136 \pm 0.053$	$f\sigma_8(0.57)$	0.47379	$0.4738 \pm 0.0049$
$A_{143 \times 217}^{\text{dust}TT}$	17.62	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8763	$1.877 \pm 0.011$	$\sigma_8(0.57)$	0.6070	$0.6069 \pm 0.0073$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.4$	$D_{40}$	1229.0	$1231 \pm 12$	$f_{2000}^{143}$	29.61	$30.1 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0815 \pm 0.0057$	$D_{220}$	5724.1	$5726 \pm 38$	$f_{2000}^{143 \times 217}$	32.37	$32.7 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04915	$0.0490 \pm 0.0050$	$D_{810}$	2533.4	$2534 \pm 13$	$f_{2000}^{217}$	105.94	$106.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.0999 \pm 0.032$	$D_{1420}$	814.87	$814.8 \pm 4.7$	$\chi_{\text{lensing}}^2$	9.73	$10.4 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1006 \pm 0.0069$	$D_{2000}$	230.17	$230.1 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.23	$10495.8 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2242	$0.224 \pm 0.046$	$n_{\text{s},0.002}$	0.96647	$0.9660 \pm 0.0047$	$\chi_{\text{plik}}^2$	2435.1	$2453.6 \pm 6.8$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245359	$0.245351 \pm 0.000071$	$\chi_{\text{H070p6}}^2$	0.788	$0.84 \pm 0.33$
$A_{100}^{\text{dust}TE}$	0.1409	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246686	$0.246677 \pm 0.000071$	$\chi_{\text{prior}}^2$	7.2	$19.4 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.132 \pm 0.029$	$10^5 D/H$	2.6057	$2.609 \pm 0.029$	$\chi_{\text{CMB}}^2$	12940.0	$12959.8 \pm 6.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.302 \pm 0.085$	Age/Gyr	13.8017	$13.803 \pm 0.025$			

Best-fit  $\chi_{\text{eff}}^2 = 12948.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.00$ ;  $R - 1 = 0.01547$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.72 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.23 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.07 Hubble - H070p6: 0.79

## 2.71 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022307	$0.02230 \pm 0.00014$	$A_{217}^{\text{dust}TE}$	1.646	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.704	$1059.68 \pm 0.29$
$\Omega_c h^2$	0.11865	$0.1188 \pm 0.0010$	$c_{100}$	0.99816	$0.99813 \pm 0.00077$	$r_{\text{drag}}$	147.518	$147.50 \pm 0.24$
$100\theta_{\text{MC}}$	1.040939	$1.04093 \pm 0.00030$	$c_{217}$	0.99606	$0.9960 \pm 0.0014$	$k_D$	0.140367	$0.14038 \pm 0.00029$
$\tau$	0.0677	$0.066 \pm 0.012$	$H_0$	67.783	$67.74 \pm 0.46$	$100\theta_D$	0.160891	$0.16090 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0665	$3.064 \pm 0.023$	$\Omega_\Lambda$	0.6918	$0.6911 \pm 0.0062$	$z_{\text{eq}}$	3368.4	$3371 \pm 23$
$n_s$	0.96722	$0.9667 \pm 0.0040$	$\Omega_m$	0.3082	$0.3089 \pm 0.0062$	$k_{\text{eq}}$	0.010281	$0.010288 \pm 0.000071$
$y_{\text{cal}}$	0.99993	$1.0002 \pm 0.0024$	$\Omega_m h^2$	0.14160	$0.14170 \pm 0.00097$	$100\theta_{\text{eq}}$	0.81921	$0.8188 \pm 0.0044$
$A_{217}^{\text{CIB}}$	67.6	$64.6 \pm 6.6$	$\Omega_m h^3$	0.095982	$0.09598 \pm 0.00029$	$100\theta_{s,\text{eq}}$	0.45252	$0.4523 \pm 0.0023$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8166	$0.8159 \pm 0.0086$	$r_{\text{drag}}/D_V(0.57)$	0.071761	$0.07173 \pm 0.00035$
$A_{143}^{\text{tSZ}}$	7.33	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4534	$0.4535 \pm 0.0059$	$H(0.57)$	93.062	$93.04 \pm 0.21$
$A_{100}^{\text{PS}}$	257.0	$261 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.6083 \pm 0.0066$	$D_A(0.57)$	1385.4	$1386.0 \pm 6.2$
$A_{143}^{\text{PS}}$	38.3	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9919	$0.991 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67519	$0.6754 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.4549	$2.454 \pm 0.024$	$f\sigma_8(0.57)$	0.47397	$0.4737 \pm 0.0049$
$A_{217}^{\text{PS}}$	96.4	$96 \pm 10$	$z_{\text{re}}$	8.99	$8.8_{-1.1}^{+1.2}$	$\sigma_8(0.57)$	0.6083	$0.6076 \pm 0.0068$
$A^{\text{kSZ}}$	0.00	$< 4.46$	$10^9 A_s$	2.1467	$2.142 \pm 0.049$	$f_{2000}^{143}$	29.60	$30.0 \pm 2.7$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8749	$1.876 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.36	$32.6 \pm 1.9$
$A_{143}^{\text{dust}TT}$	9.01	$9.0 \pm 1.8$	$D_{40}$	1228.2	$1230 \pm 11$	$f_{2000}^{217}$	105.88	$106.1 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.62	$17.2 \pm 4.1$	$D_{220}$	5724.4	$5728 \pm 38$	$\chi_{\text{lensing}}^2$	9.75	$10.3 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$D_{810}$	2532.8	$2534 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.22	$10495.6 \pm 1.0$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0815 \pm 0.0057$	$D_{1420}$	814.85	$814.9 \pm 4.7$	$\chi_{\text{plik}}^2$	2435.2	$2453.5 \pm 6.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.04928	$0.0491 \pm 0.0050$	$D_{2000}$	230.23	$230.2 \pm 1.5$	$\chi_{\text{H070p6}}^2$	0.719	$0.76 \pm 0.24$
$A_{100 \times 217}^{\text{dust}EE}$	0.0986	$0.0999 \pm 0.032$	$n_{s,0.002}$	0.96722	$0.9667 \pm 0.0040$	$\chi_{\text{JLA}}^2$	706.661	$706.71 \pm 0.16$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1007 \pm 0.0069$	$Y_P$	0.245365	$0.245360 \pm 0.000063$	$\chi_{6\text{DF}}^2$	0.0102	$0.040 \pm 0.053$
$A_{143 \times 217}^{\text{dust}EE}$	0.2234	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.246692	$0.246686 \pm 0.000063$	$\chi_{\text{MGS}}^2$	1.407	$1.42 \pm 0.45$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$10^5 D/H$	2.6032	$2.605 \pm 0.026$	$\chi_{\text{DR11CMass}}^2$	2.411	$2.71 \pm 0.44$
$A_{100}^{\text{dust}TE}$	0.1408	$0.141 \pm 0.038$	Age/Gyr	13.7976	$13.799 \pm 0.021$	$\chi_{\text{DR11LOWZ}}^2$	0.483	$0.61 \pm 0.45$
$A_{100 \times 143}^{\text{dust}TE}$	0.1308	$0.132 \pm 0.029$	$z_*$	1089.880	$1089.90 \pm 0.23$	$\chi_{\text{prior}}^2$	7.2	$19.4 \pm 5.4$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.085$	$r_*$	144.829	$144.81 \pm 0.24$	$\chi_{\text{CMB}}^2$	12940.2	$12959.4 \pm 6.6$
$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.053$	$100\theta_*$	1.041128	$1.04112 \pm 0.00029$	$\chi_{\text{BAO}}^2$	4.311	$4.79 \pm 0.64$
$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.336 \pm 0.080$	$D_A/\text{Gpc}$	13.9108	$13.909 \pm 0.023$			

Best-fit  $\chi_{\text{eff}}^2 = 13659.04$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.10$ ;  $R - 1 = 0.01658$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.41 DR11CMass: 2.41 DR11LOWZ: 0.48 CMB - smica\_g30\_ftl\_full\_pp: 9.75 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.22 plik\_dx11dr2\_HM\_v18\_TTT

**2.72 base\_plikHM\_TTTEEE\_lowTEB lensing\_post\_zre6p5**

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02227 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.053$	$z_*$	$1089.97 \pm 0.28$
$\Omega_c h^2$	$0.1191 \pm 0.0013$	$A_{143 \times 217}^{\text{dust}TE}$	$0.337 \pm 0.080$	$r_*$	$144.74 \pm 0.30$
$100\theta_{\text{MC}}$	$1.04088 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.26$	$100\theta_*$	$1.04108 \pm 0.00031$
$\tau$	$0.065^{+0.011}_{-0.015}$	$c_{100}$	$0.99813 \pm 0.00077$	$D_A/\text{Gpc}$	$13.903 \pm 0.028$
$\ln(10^{10} A_s)$	$3.062^{+0.019}_{-0.027}$	$c_{217}$	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	$1059.63 \pm 0.31$
$n_s$	$0.9657 \pm 0.0046$	$H_0$	$67.57 \pm 0.61$	$r_{\text{drag}}$	$147.44 \pm 0.29$
$y_{\text{cal}}$	$1.0001 \pm 0.0024$	$\Omega_\Lambda$	$0.6887 \pm 0.0082$	$k_D$	$0.14042 \pm 0.00031$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.6$	$\Omega_m$	$0.3113 \pm 0.0082$	$100\theta_D$	$0.16092 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1420 \pm 0.0013$	$z_{\text{eq}}$	$3379 \pm 30$
$A_{143}^{\text{tSZ}}$	$5.3 \pm 1.9$	$\Omega_m h^3$	$0.09596 \pm 0.00030$	$k_{\text{eq}}$	$0.010313 \pm 0.000092$
$A_{100}^{\text{PS}}$	$262 \pm 28$	$\sigma_8$	$0.8161^{+0.0073}_{-0.0089}$	$100\theta_{\text{eq}}$	$0.8172 \pm 0.0058$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.4553 \pm 0.0068$	$100\theta_{s,\text{eq}}$	$0.4515 \pm 0.0029$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	$0.6095 \pm 0.0066$	$r_{\text{drag}}/D_V(0.57)$	$0.07160 \pm 0.00046$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$\sigma_8/h^{0.5}$	$0.9929 \pm 0.0098$	$H(0.57)$	$92.97 \pm 0.27$
$A^{\text{kSZ}}$	$< 4.48$	$\langle d^2 \rangle^{1/2}$	$2.458 \pm 0.023$	$D_A(0.57)$	$1388.3 \pm 8.1$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$z_{\text{re}}$	$8.7^{+1.1}_{-1.3}$	$F_{\text{AP}}(0.57)$	$0.6760 \pm 0.0021$
$A_{143}^{\text{dust}TT}$	$9.0 \pm 1.8$	$10^9 A_s$	$2.138^{+0.040}_{-0.058}$	$f\sigma_8(0.57)$	$0.4744 \pm 0.0047$
$A_{143 \times 217}^{\text{dust}TT}$	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.011$	$\sigma_8(0.57)$	$0.6072^{+0.0056}_{-0.0078}$
$A_{217}^{\text{dust}TT}$	$81.6 \pm 7.4$	$D_{40}$	$1231 \pm 12$	$f_{2000}^{143}$	$30.1 \pm 2.7$
$A_{100}^{\text{dust}EE}$	$0.0814 \pm 0.0057$	$D_{220}$	$5725 \pm 38$	$f_{2000}^{143 \times 217}$	$32.7 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0489 \pm 0.0050$	$D_{810}$	$2534 \pm 13$	$f_{2000}^{217}$	$106.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0998 \pm 0.032$	$D_{1420}$	$814.6 \pm 4.7$	$\chi_{\text{lensing}}^2$	$10.5 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.1005 \pm 0.0069$	$D_{2000}$	$230.0 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	$10495.8 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	$0.225 \pm 0.046$	$n_{s,0.002}$	$0.9657 \pm 0.0046$	$\chi_{\text{plik}}^2$	$2453.3 \pm 6.7$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.245346 \pm 0.000070$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.5$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246672 \pm 0.000070$	$\chi_{\text{CMB}}^2$	$12959.6 \pm 6.6$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$10^5 D/H$	$2.611 \pm 0.029$		
$A_{100 \times 217}^{\text{dust}TE}$	$0.302 \pm 0.084$	$\text{Age/Gyr}$	$13.805 \pm 0.025$		

$$\bar{\chi}_{\text{eff}}^2 = 12978.93; R - 1 = 0.01449$$

### 2.73 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02228 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	$0.337 \pm 0.080$	$100\theta_*$	$1.04110 \pm 0.00030$
$\Omega_c h^2$	$0.1189 \pm 0.0010$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	$13.907 \pm 0.023$
$100\theta_{\text{MC}}$	$1.04091 \pm 0.00030$	$c_{100}$	$0.99813 \pm 0.00077$	$z_{\text{drag}}$	$1059.65 \pm 0.30$
$\tau$	$0.066^{+0.011}_{-0.013}$	$c_{217}$	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	$147.48 \pm 0.24$
$\ln(10^{10} A_s)$	$3.064^{+0.020}_{-0.024}$	$H_0$	$67.66 \pm 0.46$	$k_D$	$0.14039 \pm 0.00029$
$n_s$	$0.9663 \pm 0.0040$	$\Omega_\Lambda$	$0.6901 \pm 0.0062$	$100\theta_D$	$0.16091 \pm 0.00017$
$y_{\text{cal}}$	$1.0001 \pm 0.0024$	$\Omega_m$	$0.3099 \pm 0.0062$	$z_{\text{eq}}$	$3374 \pm 23$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.6$	$\Omega_m h^2$	$0.14184 \pm 0.00097$	$k_{\text{eq}}$	$0.010298 \pm 0.000071$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^3$	$0.09597 \pm 0.00030$	$100\theta_{\text{eq}}$	$0.8181 \pm 0.0044$
$A_{143}^{\text{tSZ}}$	$5.3 \pm 1.9$	$\sigma_8$	$0.8162^{+0.0077}_{-0.0089}$	$100\theta_{s,\text{eq}}$	$0.4520 \pm 0.0023$
$A_{100}^{\text{PS}}$	$262 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	$0.4543 \pm 0.0059$	$r_{\text{drag}}/D_V(0.57)$	$0.07167 \pm 0.00035$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	$0.6090 \pm 0.0063$	$H(0.57)$	$93.01 \pm 0.21$
$A_{143 \times 217}^{\text{PS}}$	$39^{+9}_{-10}$	$\sigma_8/h^{0.5}$	$0.9923 \pm 0.0098$	$D_A(0.57)$	$1387.0 \pm 6.2$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	$2.456 \pm 0.023$	$F_{\text{AP}}(0.57)$	$0.6756 \pm 0.0016$
$A^{\text{kSZ}}$	$< 4.47$	$z_{\text{re}}$	$8.8 \pm 1.1$	$f\sigma_8(0.57)$	$0.4741 \pm 0.0047$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$10^9 A_s$	$2.142^{+0.042}_{-0.052}$	$\sigma_8(0.57)$	$0.6076^{+0.0059}_{-0.0073}$
$A_{143}^{\text{dust}TT}$	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.011$	$f_{2000}^{143}$	$30.0 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	$17.2 \pm 4.1$	$D_{40}$	$1230 \pm 11$	$f_{2000}^{143 \times 217}$	$32.6 \pm 1.8$
$A_{217}^{\text{dust}TT}$	$81.6 \pm 7.4$	$D_{220}$	$5726 \pm 38$	$f_{2000}^{217}$	$106.1 \pm 1.8$
$A_{100}^{\text{dust}EE}$	$0.0815 \pm 0.0057$	$D_{810}$	$2534 \pm 13$	$\chi_{\text{lensing}}^2$	$10.4 \pm 1.8$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0490 \pm 0.0050$	$D_{1420}$	$814.7 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	$10495.7 \pm 1.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0999 \pm 0.032$	$D_{2000}$	$230.1 \pm 1.5$	$\chi_{\text{plik}}^2$	$2453.2 \pm 6.7$
$A_{143}^{\text{dust}EE}$	$0.1006 \pm 0.0069$	$n_{s,0.002}$	$0.9663 \pm 0.0040$	$\chi_{6\text{DF}}^2$	$0.047 \pm 0.058$
$A_{143 \times 217}^{\text{dust}EE}$	$0.225 \pm 0.046$	$Y_{\text{P}}$	$0.245353 \pm 0.000063$	$\chi_{\text{MGS}}^2$	$1.35 \pm 0.45$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	$0.246679 \pm 0.000063$	$\chi_{\text{DR11CMass}}^2$	$2.74 \pm 0.47$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$10^5 D/H$	$2.608 \pm 0.026$	$\chi_{\text{DR11LOWZ}}^2$	$0.68 \pm 0.48$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$\text{Age}/\text{Gyr}$	$13.802 \pm 0.021$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.4$
$A_{100 \times 217}^{\text{dust}TE}$	$0.302 \pm 0.084$	$z_*$	$1089.94 \pm 0.23$	$\chi_{\text{CMB}}^2$	$12959.3 \pm 6.6$
$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.053$	$r_*$	$144.78 \pm 0.24$	$\chi_{\text{BAO}}^2$	$4.82 \pm 0.68$

$$\bar{\chi}_{\text{eff}}^2 = 12983.50; R - 1 = 0.01640$$

## 2.74 base\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_reion

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022219	$0.02222 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$z_*$	1090.102	$1090.09 \pm 0.26$
$\Omega_c h^2$	0.11991	$0.1198 \pm 0.0012$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.341 \pm 0.080$	$r_*$	144.570	$144.59 \pm 0.26$
$100\theta_{\text{MC}}$	1.040778	$1.04079 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	1.672	$1.67 \pm 0.26$	$100\theta_*$	1.040972	$1.04099 \pm 0.00030$
$\tau$	0.0529	$0.0546^{+0.0053}_{-0.0091}$	$c_{100}$	0.99813	$0.99814 \pm 0.00077$	$D_A/\text{Gpc}$	13.8880	$13.890 \pm 0.025$
$\ln(10^{10} A_s)$	3.0405	$3.044^{+0.011}_{-0.016}$	$c_{217}$	0.99611	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.589	$1059.58 \pm 0.30$
$n_s$	0.96377	$0.9636 \pm 0.0041$	$H_0$	67.21	$67.26 \pm 0.53$	$r_{\text{drag}}$	147.283	$147.31 \pm 0.27$
$y_{\text{cal}}$	1.00021	$1.0003 \pm 0.0024$	$\Omega_\Lambda$	0.6839	$0.6845 \pm 0.0073$	$k_D$	0.140547	$0.14052 \pm 0.00030$
$A_{217}^{\text{CIB}}$	68.1	$65.0 \pm 6.6$	$\Omega_m$	0.3161	$0.3155 \pm 0.0073$	$100\theta_D$	0.160949	$0.16095 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14277	$0.1427 \pm 0.0011$	$z_{\text{eq}}$	3396.4	$3394 \pm 27$
$A_{143}^{\text{tSZ}}$	7.26	$5.3 \pm 1.9$	$\Omega_m h^3$	0.095960	$0.09596 \pm 0.00030$	$k_{\text{eq}}$	0.010366	$0.010360 \pm 0.000082$
$A_{100}^{\text{PS}}$	258.4	$264 \pm 28$	$\sigma_8$	0.8095	$0.8104^{+0.0054}_{-0.0063}$	$100\theta_{\text{eq}}$	0.8138	$0.8142 \pm 0.0050$
$A_{143}^{\text{PS}}$	39.7	$45 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.4552 \pm 0.0069$	$100\theta_{s,\text{eq}}$	0.44975	$0.4500 \pm 0.0026$
$A_{143 \times 217}^{\text{PS}}$	33.2	$40^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.6074 \pm 0.0062$	$r_{\text{drag}}/D_V(0.57)$	0.071326	$0.07136 \pm 0.00040$
$A_{217}^{\text{PS}}$	96.7	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9874	$0.9882 \pm 0.0088$	$H(0.57)$	92.828	$92.85 \pm 0.24$
$A^{\text{kSZ}}$	0.01	$< 4.68$	$\langle d^2 \rangle^{1/2}$	2.4434	$2.447 \pm 0.021$	$D_A(0.57)$	1393.0	$1392.4 \pm 7.2$
$A_{100}^{\text{dust}TT}$	7.46	$7.5 \pm 1.9$	$z_{\text{re}}$	7.57	$7.72^{+0.57}_{-0.89}$	$F_{\text{AP}}(0.57)$	0.67718	$0.6770 \pm 0.0018$
$A_{143}^{\text{dust}TT}$	9.11	$9.1 \pm 1.8$	$10^9 A_s$	2.0917	$2.099^{+0.024}_{-0.035}$	$f\sigma_8(0.57)$	0.47179	$0.4722 \pm 0.0042$
$A_{143 \times 217}^{\text{dust}TT}$	17.85	$17.3 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8817	$1.882 \pm 0.011$	$\sigma_8(0.57)$	0.60111	$0.6019^{+0.0035}_{-0.0049}$
$A_{217}^{\text{dust}TT}$	82.1	$81.8 \pm 7.3$	$D_{40}$	1232.0	$1233 \pm 12$	$f_{2000}^{143}$	30.30	$30.7 \pm 2.6$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0812 \pm 0.0056$	$D_{220}$	5725.2	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	32.94	$33.1 \pm 1.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0487 \pm 0.0050$	$D_{810}$	2536.2	$2536 \pm 13$	$f_{2000}^{217}$	106.43	$106.6 \pm 1.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.0997 \pm 0.032$	$D_{1420}$	814.99	$814.7 \pm 4.7$	$\chi_{\text{lensing}}^2$	9.26	$9.8 \pm 1.2$
$A_{143}^{\text{dust}EE}$	0.0999	$0.1003 \pm 0.0069$	$D_{2000}$	229.88	$229.8 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.58	$10495.80 \pm 0.99$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.226 \pm 0.046$	$n_{s,0.002}$	0.96377	$0.9636 \pm 0.0041$	$\chi_{\text{plik}}^2$	2435.9	$2453.8 \pm 6.6$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245326	$0.245325 \pm 0.000067$	$\chi_{\text{prior}}^2$	7.4	$20 \pm 6$
$A_{100}^{\text{dust}TE}$	0.1417	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246652	$0.246651 \pm 0.000067$	$\chi_{\text{CMB}}^2$	12940.7	$12959.4 \pm 6.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1322	$0.132 \pm 0.029$	$10^5 D/H$	2.6199	$2.620 \pm 0.028$			
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.304 \pm 0.084$	Age/Gyr	13.8168	$13.815 \pm 0.023$			

Best-fit  $\chi_{\text{eff}}^2 = 12948.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.66$ ;  $R - 1 = 0.01869$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.26 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.58 plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.85

## 2.75 base\_lenonly

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02215	$0.02228 \pm 0.00089$	$10^9 A_s$	2.282	$2.16^{+0.28}_{-0.36}$	$z_{\text{drag}}$	1059.09	$1059.4 \pm 2.4$
$\Omega_c h^2$	0.1155	$0.116^{+0.012}_{-0.015}$	$10^9 A_s e^{-2\tau}$	1.984	$1.88^{+0.24}_{-0.31}$	$r_{\text{drag}}$	148.55	$148.4 \pm 3.8$
$100\theta_{\text{MC}}$	1.062	$1.035 \pm 0.058$	$D_{40}$	1352	$1263^{+200}_{-300}$	$k_{\text{D}}$	0.13918	$0.1395^{+0.0041}_{-0.0046}$
$\ln(10^{10} A_s)$	3.128	$3.06 \pm 0.14$	$D_{220}$	6163	$5844^{+900}_{-1000}$	$100\theta_{\text{D}}$	0.1645	$0.1602 \pm 0.0088$
$n_s$	0.9595	$0.959 \pm 0.020$	$D_{810}$	2667	$2374^{+300}_{-500}$	$z_{\text{eq}}$	3289	$3311^{+280}_{-360}$
$H_0$	76.2	—	$D_{1420}$	840	$737^{+100}_{-200}$	$k_{\text{eq}}$	0.01004	$0.01011^{+0.00086}_{-0.0011}$
$\Omega_\Lambda$	0.762	$0.636^{+0.25}_{-0.093}$	$D_{2000}$	238.5	$235^{+40}_{-60}$	$100\theta_{\text{eq}}$	0.851	$0.829 \pm 0.053$
$\Omega_m$	0.238	$0.364^{+0.093}_{-0.25}$	$n_{s,0.002}$	0.9595	$0.959 \pm 0.020$	$100\theta_{s,\text{eq}}$	0.4696	$0.457 \pm 0.028$
$\Omega_m h^2$	0.1383	$0.139^{+0.012}_{-0.015}$	$Y_{\text{P}}$	0.245295	$0.24534 \pm 0.00040$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.0782	$0.072^{+0.010}_{-0.018}$
$\Omega_m h^3$	0.1053	$0.095^{+0.023}_{-0.039}$	$Y_{\text{P}}^{\text{BBN}}$	0.246621	$0.24667 \pm 0.00040$	$H(0.57)$	98.9	$93^{+10}_{-20}$
$\sigma_8$	0.845	$0.791^{+0.13}_{-0.095}$	$10^5 \text{D}/\text{H}$	2.632	$2.62^{+0.16}_{-0.19}$	$D_{\text{A}}(0.57)$	1268	$1437^{+200}_{-400}$
$\sigma_8 \Omega_m^{0.5}$	0.413	$0.449^{+0.057}_{-0.076}$	Age/Gyr	13.18	$14.1^{+1.5}_{-2.4}$	$F_{\text{AP}}(0.57)$	0.6564	$0.684^{+0.027}_{-0.058}$
$\sigma_8 \Omega_m^{0.25}$	0.5904	$0.591 \pm 0.021$	$z_*$	1089.79	$1089.7^{+1.5}_{-1.6}$	$f\sigma_8(0.57)$	0.4670	$0.451^{+0.033}_{-0.021}$
$\sigma_8/h^{0.5}$	0.9682	$0.969^{+0.023}_{-0.020}$	$r_*$	145.78	$145.6 \pm 3.6$	$\sigma_8(0.57)$	0.649	$0.59^{+0.14}_{-0.11}$
$\langle d^2 \rangle^{1/2}$	2.460	$2.461 \pm 0.059$	$100\theta_*$	1.063	$1.035 \pm 0.058$	$\chi^2_{\text{lensing}}$	8.44	$10.6 \pm 2.1$
$z_{\text{re}}$	9.224	$9.16 \pm 0.39$	$D_{\text{A}}/\text{Gpc}$	13.72	$14.12^{+0.98}_{-1.2}$	$\chi^2_{\text{prior}}$	0.00	$2.0 \pm 1.9$

Best-fit  $\chi^2_{\text{eff}} = 8.44$ ;  $\bar{\chi}^2_{\text{eff}} = 12.52$ ;  $R - 1 = 0.00540$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lenonly: 8.44

## 2.76 base\_lenonly\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02233	$0.02228 \pm 0.00088$	$D_{40}$	1237	$1219^{+130}_{-160}$	$z_{\text{eq}}$	3342	$3409^{+270}_{-350}$
$\Omega_c h^2$	0.1175	$0.120^{+0.011}_{-0.015}$	$D_{220}$	5716	$5615^{+800}_{-1000}$	$k_{\text{eq}}$	0.01020	$0.01040^{+0.00082}_{-0.0011}$
$100\theta_{\text{MC}}$	1.0396	$1.043 \pm 0.016$	$D_{810}$	2490	$2437 \pm 300$	$100\theta_{\text{eq}}$	0.8230	$0.817 \pm 0.041$
$\ln(10^{10} A_s)$	3.056	$3.04 \pm 0.11$	$D_{1420}$	797	$775^{+100}_{-90}$	$100\theta_{s,\text{eq}}$	0.4544	$0.451 \pm 0.021$
$n_s$	0.9581	$0.957 \pm 0.020$	$D_{2000}$	224.3	$221^{+30}_{-30}$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.07184 \pm 0.00056$
$H_0$	67.75	$68.0 \pm 1.4$	$n_{s,0.002}$	0.9581	$0.957 \pm 0.020$	$H(0.57)$	92.87	$93.4^{+2.7}_{-3.2}$
$\Omega_\Lambda$	0.6938	$0.690^{+0.021}_{-0.018}$	$Y_P$	0.245375	$0.24534 \pm 0.00039$	$D_A(0.57)$	1387.2	$1381 \pm 35$
$\Omega_m$	0.3062	$0.310^{+0.018}_{-0.021}$	$Y_P^{\text{BBN}}$	0.246701	$0.24667 \pm 0.00039$	$F_{\text{AP}}(0.57)$	0.67467	$0.6755 \pm 0.0048$
$\Omega_m h^2$	0.1405	$0.143^{+0.011}_{-0.015}$	$10^5 \text{D}/\text{H}$	2.599	$2.62^{+0.15}_{-0.19}$	$f\sigma_8(0.57)$	0.4663	$0.468 \pm 0.014$
$\Omega_m h^3$	0.0952	$0.0976^{+0.0089}_{-0.012}$	Age/Gyr	13.831	$13.76 \pm 0.45$	$\sigma_8(0.57)$	0.5997	$0.600 \pm 0.013$
$\sigma_8$	0.8044	$0.806 \pm 0.019$	$z_*$	1089.76	$1090.1^{+1.4}_{-1.6}$	$\chi^2_{\text{lensing}}$	8.55	$10.6 \pm 2.1$
$\sigma_8 \Omega_m^{0.5}$	0.4451	$0.448^{+0.020}_{-0.023}$	$r_*$	145.10	$144.5 \pm 3.4$	$\chi^2_{6\text{DF}}$	0.0058	$0.07 \pm 0.10$
$\sigma_8 \Omega_m^{0.25}$	0.5983	$0.601 \pm 0.020$	$100\theta_*$	1.0398	$1.043 \pm 0.016$	$\chi^2_{\text{MGS}}$	1.47	$1.56 \pm 0.72$
$\sigma_8/h^{0.5}$	0.9773	$0.978 \pm 0.020$	$D_A/\text{Gpc}$	13.96	$13.87 \pm 0.54$	$\chi^2_{\text{DR11CMass}}$	2.45	$3.1 \pm 1.2$
$\langle d^2 \rangle^{1/2}$	2.453	$2.445 \pm 0.055$	$z_{\text{drag}}$	1059.67	$1059.7 \pm 2.3$	$\chi^2_{\text{DR11LOWZ}}$	0.437	$0.63 \pm 0.66$
$z_{\text{re}}$	9.175	$9.25^{+0.33}_{-0.38}$	$r_{\text{drag}}$	147.79	$147.2 \pm 3.6$	$\chi^2_{\text{prior}}$	0.01	$2.0 \pm 2.0$
$10^9 A_s$	2.124	$2.10^{+0.21}_{-0.26}$	$k_D$	0.14010	$0.1407^{+0.0040}_{-0.0044}$	$\chi^2_{\text{BAO}}$	4.37	$5.4 \pm 1.6$
$10^9 A_s e^{-2\tau}$	1.846	$1.82^{+0.18}_{-0.23}$	$100\theta_D$	0.16069	$0.1612^{+0.0023}_{-0.0026}$			

Best-fit  $\chi^2_{\text{eff}} = 12.93$ ;  $\bar{\chi}^2_{\text{eff}} = 17.98$ ;  $R - 1 = 0.00533$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.45 DR11LOWZ: 0.44 CMB - smica\_g30\_ftl\_full\_pp\_lenonly: 8.55

## 2.77 base\_lensonly\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02228	$0.02231 \pm 0.00089$	$10^9 A_s e^{-2\tau}$	1.968	$1.92^{+0.22}_{-0.30}$	$r_{\text{drag}}$	149.22	$148.5 \pm 3.3$
$\Omega_c h^2$	0.1125	$0.115^{+0.010}_{-0.012}$	$D_{40}$	1321	$1296^{+200}_{-200}$	$k_D$	0.13858	$0.1394 \pm 0.0037$
$\ln(10^{10} A_s)$	3.119	$3.09 \pm 0.13$	$D_{220}$	6190	$6040^{+900}_{-1000}$	$100\theta_D$	0.16112	$0.1610 \pm 0.0013$
$n_s$	0.9634	$0.960 \pm 0.020$	$D_{810}$	2673	$2605^{+300}_{-400}$	$z_{\text{eq}}$	3221	$3291^{+250}_{-300}$
$H_0$	69.96	$69.2 \pm 4.0$	$D_{1420}$	854	$832^{+100}_{-100}$	$k_{\text{eq}}$	0.00983	$0.01005^{+0.00076}_{-0.00092}$
$\Omega_\Lambda$	0.723	$0.705^{+0.070}_{-0.045}$	$D_{2000}$	240.1	$234^{+30}_{-40}$	$100\theta_{\text{eq}}$	0.847	$0.837^{+0.049}_{-0.055}$
$\Omega_m$	0.277	$0.295^{+0.045}_{-0.070}$	$n_{s,0.002}$	0.9634	$0.960 \pm 0.020$	$100\theta_{s,\text{eq}}$	0.4669	$0.462 \pm 0.026$
$\Omega_m h^2$	0.1354	$0.138^{+0.010}_{-0.013}$	$Y_P$	0.245352	$0.24536 \pm 0.00040$	$r_{\text{drag}}/D_V(0.57)$	0.07370	$0.0731^{+0.0034}_{-0.0040}$
$\Omega_m h^3$	0.09476	$0.0953 \pm 0.0027$	$Y_P^{\text{BBN}}$	0.246678	$0.24668 \pm 0.00040$	$H(0.57)$	93.72	$93.7^{+1.1}_{-1.6}$
$\sigma_8$	0.8145	$0.807 \pm 0.021$	$10^5 D/H$	2.609	$2.61^{+0.15}_{-0.19}$	$D_A(0.57)$	1358.9	$1369 \pm 49$
$\sigma_8 \Omega_m^{0.5}$	0.4285	$0.435 \pm 0.035$	Age/Gyr	13.775	$13.775 \pm 0.098$	$F_{\text{AP}}(0.57)$	0.6670	$0.671^{+0.013}_{-0.017}$
$\sigma_8 \Omega_m^{0.25}$	0.5908	$0.592^{+0.023}_{-0.021}$	$z_*$	1089.37	$1089.6^{+1.3}_{-1.5}$	$f\sigma_8(0.57)$	0.4638	$0.462^{+0.013}_{-0.010}$
$\sigma_8/h^{0.5}$	0.9738	$0.971^{+0.023}_{-0.020}$	$r_*$	146.48	$145.8 \pm 3.1$	$\sigma_8(0.57)$	0.6148	$0.606^{+0.030}_{-0.027}$
$\langle d^2 \rangle^{1/2}$	2.467	$2.460 \pm 0.054$	$100\theta_*$	1.041009	$1.040998 \pm 0.000099$	$\chi^2_{\text{lensing}}$	8.44	$10.4 \pm 1.9$
$z_{\text{re}}$	9.090	$9.14^{+0.28}_{-0.33}$	$D_A/\text{Gpc}$	14.071	$14.00 \pm 0.29$	$\chi^2_{\text{prior}}$	0.00	$2.0 \pm 2.0$
$10^9 A_s$	2.263	$2.21^{+0.25}_{-0.34}$	$z_{\text{drag}}$	1059.17	$1059.4 \pm 2.3$			

Best-fit  $\chi^2_{\text{eff}} = 8.45$ ;  $\bar{\chi}^2_{\text{eff}} = 12.43$ ;  $R - 1 = 0.00399$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.44



## 2.78 base\_lenonly\_BAO\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02234	$0.02228 \pm 0.00091$	$D_{220}$	5661	$5635^{+200}_{-230}$	$k_{\text{eq}}$	0.010270	$0.01027 \pm 0.00016$
$\Omega_c h^2$	0.11847	$0.1185 \pm 0.0017$	$D_{810}$	2476	$2467^{+87}_{-98}$	$100\theta_{\text{eq}}$	0.8198	$0.8200 \pm 0.0081$
$\ln(10^{10} A_s)$	3.0506	$3.046 \pm 0.033$	$D_{1420}$	793.2	$790^{+33}_{-37}$	$100\theta_{s,\text{eq}}$	0.45281	$0.4530 \pm 0.0046$
$n_s$	0.9588	$0.959 \pm 0.019$	$D_{2000}$	223.4	$222^{+11}_{-12}$	$r_{\text{drag}}/D_V(0.57)$	0.07179	$0.07179 \pm 0.00051$
$H_0$	67.83	$67.79 \pm 0.81$	$n_{s,0.002}$	0.9588	$0.959 \pm 0.019$	$H(0.57)$	93.07	$93.04 \pm 0.65$
$\Omega_\Lambda$	0.6925	$0.6922 \pm 0.0092$	$Y_P$	0.245380	$0.24534^{+0.00044}_{-0.00039}$	$D_A(0.57)$	1384.9	$1386 \pm 13$
$\Omega_m$	0.3075	$0.3078 \pm 0.0092$	$Y_P^{\text{BBN}}$	0.246706	$0.24667^{+0.00044}_{-0.00039}$	$F_{\text{AP}}(0.57)$	0.67501	$0.6751 \pm 0.0023$
$\Omega_m h^2$	0.14146	$0.1414 \pm 0.0022$	$10^5 D/H$	2.597	$2.62^{+0.15}_{-0.19}$	$f\sigma_8(0.57)$	0.4680	$0.4673 \pm 0.0087$
$\Omega_m h^3$	0.09595	$0.0959 \pm 0.0018$	Age/Gyr	13.798	$13.803 \pm 0.089$	$\sigma_8(0.57)$	0.6011	$0.600 \pm 0.012$
$\sigma_8$	0.8067	$0.806 \pm 0.015$	$z_*$	1089.82	$1089.9^{+1.0}_{-1.2}$	$\chi^2_{\text{lensing}}$	8.62	$9.7 \pm 1.5$
$\sigma_8 \Omega_m^{0.5}$	0.4473	$0.4469 \pm 0.0099$	$r_*$	144.85	$144.90 \pm 0.94$	$\chi^2_{6\text{DF}}$	0.0074	$0.065 \pm 0.089$
$\sigma_8 \Omega_m^{0.25}$	0.6007	$0.600 \pm 0.011$	$100\theta_*$	1.040989	$1.040995 \pm 0.000096$	$\chi^2_{\text{MGS}}$	1.47	$1.54 \pm 0.68$
$\sigma_8/h^{0.5}$	0.9796	$0.978 \pm 0.019$	$D_A/\text{Gpc}$	13.915	$13.919 \pm 0.089$	$\chi^2_{\text{DR11CMass}}$	2.41	$3.05 \pm 0.92$
$\langle d^2 \rangle^{1/2}$	2.4511	$2.446 \pm 0.036$	$z_{\text{drag}}$	1059.74	$1059.6 \pm 2.1$	$\chi^2_{\text{DR11LOWZ}}$	0.448	$0.64 \pm 0.64$
$z_{\text{re}}$	9.193	$9.22^{+0.22}_{-0.26}$	$r_{\text{drag}}$	147.53	$147.6 \pm 1.2$	$\chi^2_{\text{prior}}$	-0.02	$1.9 \pm 1.9$
$10^9 A_s$	2.113	$2.105^{+0.067}_{-0.076}$	$k_D$	0.14038	$0.1402 \pm 0.0020$	$\chi^2_{\text{BAO}}$	4.34	$5.3 \pm 1.4$
$10^9 A_s e^{-2\tau}$	1.837	$1.830^{+0.058}_{-0.066}$	$100\theta_D$	0.16083	$0.1610^{+0.0012}_{-0.0014}$			
$D_{40}$	1227	$1222^{+48}_{-56}$	$z_{\text{eq}}$	3365	$3364 \pm 52$			

Best-fit  $\chi^2_{\text{eff}} = 12.94$ ;  $\bar{\chi}^2_{\text{eff}} = 16.95$ ;  $R - 1 = 0.00592$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.45 CMB - smica\_g30\_ftl\_full\_pp\_lenonly: 8.62

## 2.79 base\_WMAP

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022574	$0.02267 \pm 0.00049$	$z_{\text{re}}$	10.55	$10.6 \pm 1.1$	$z_{\text{drag}}$	1060.01	$1060.2 \pm 1.1$
$\Omega_c h^2$	0.11451	$0.1137 \pm 0.0045$	$10^9 A_s$	2.204	$2.202^{+0.062}_{-0.072}$	$r_{\text{drag}}$	148.34	$148.5 \pm 1.2$
$100\theta_{\text{MC}}$	1.04006	$1.0403 \pm 0.0023$	$10^9 A_s e^{-2\tau}$	1.8522	$1.844 \pm 0.030$	$k_{\text{D}}$	0.13971	$0.1396 \pm 0.0013$
$\tau$	0.0868	$0.089^{+0.013}_{-0.015}$	$D_{40}$	1221.5	$1219 \pm 24$	$100\theta_{\text{D}}$	0.160529	$0.16048 \pm 0.00049$
$\ln(10^{10} A_s)$	3.0926	$3.092 \pm 0.031$	$D_{220}$	5751.3	$5751 \pm 35$	$z_{\text{eq}}$	3276	$3258 \pm 100$
$n_s$	0.9727	$0.974 \pm 0.013$	$D_{810}$	2517.7	$2509 \pm 32$	$k_{\text{eq}}$	0.009998	$0.00994 \pm 0.00032$
$A_{\text{tsz}}$	0.00	—	$D_{1420}$	811.0	$808 \pm 16$	$100\theta_{\text{eq}}$	0.8365	$0.841 \pm 0.021$
$H_0$	69.21	$69.7 \pm 2.1$	$D_{2000}$	229.4	$228.8 \pm 6.0$	$100\theta_{\text{s,eq}}$	0.4613	$0.464 \pm 0.011$
$\Omega_{\Lambda}$	0.7125	$0.717^{+0.028}_{-0.024}$	$n_{\text{s},0.002}$	0.9727	$0.974 \pm 0.013$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.07290	$0.0733 \pm 0.0017$
$\Omega_{\text{m}}$	0.2875	$0.283^{+0.024}_{-0.028}$	$Y_{\text{P}}$	0.245483	$0.24552 \pm 0.00022$	$H(0.57)$	93.52	$93.8^{+1.0}_{-1.2}$
$\Omega_{\text{m}} h^2$	0.13773	$0.1370 \pm 0.0043$	$Y_{\text{P}}^{\text{BBN}}$	0.246809	$0.24685 \pm 0.00022$	$D_{\text{A}}(0.57)$	1367.8	$1361 \pm 29$
$\Omega_{\text{m}} h^3$	0.09532	$0.0954 \pm 0.0018$	$10^5 \text{D}/\text{H}$	2.553	$2.538 \pm 0.089$	$F_{\text{AP}}(0.57)$	0.6698	$0.6685 \pm 0.0067$
$\sigma_8$	0.8121	$0.808 \pm 0.023$	$\text{Age}/\text{Gyr}$	13.777	$13.76 \pm 0.11$	$f\sigma_8(0.57)$	0.4657	$0.462 \pm 0.019$
$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4355	$0.430 \pm 0.029$	$z_*$	1089.19	$1089.00 \pm 0.81$	$\sigma_8(0.57)$	0.6102	$0.608 \pm 0.014$
$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.5947	$0.589 \pm 0.028$	$r_*$	145.71	$145.9 \pm 1.1$	$\chi^2_{\text{WMAP}}$	7557.94	$7564.0 \pm 3.5$
$\sigma_8/h^{0.5}$	0.9762	$0.968 \pm 0.038$	$100\theta_*$	1.04023	$1.0404 \pm 0.0022$			
$\langle d^2 \rangle^{1/2}$	2.435	$2.422 \pm 0.076$	$D_{\text{A}}/\text{Gpc}$	14.008	$14.02 \pm 0.12$			

Best-fit  $\chi^2_{\text{eff}} = 7557.94$ ;  $\bar{\chi}^2_{\text{eff}} = 7564.00$ ;  $R - 1 = 0.00785$

$\chi^2_{\text{eff}}$ : CMB - WMAP: 7557.94

## 2.80 base\_WMAP\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022454	$0.02247 \pm 0.00042$	$10^9 A_s$	2.208	$2.210^{+0.059}_{-0.070}$	$k_D$	0.14026	$0.1403 \pm 0.0011$
$\Omega_c h^2$	0.11725	$0.1172 \pm 0.0021$	$10^9 A_s e^{-2\tau}$	1.8663	$1.863 \pm 0.021$	$100\theta_D$	0.16052	$0.16051 \pm 0.00051$
$100\theta_{MC}$	1.03953	$1.0395^{+0.0022}_{-0.0019}$	$D_{40}$	1231.8	$1234^{+17}_{-19}$	$z_{eq}$	3338	$3337 \pm 54$
$\tau$	0.0842	$0.085^{+0.012}_{-0.014}$	$D_{220}$	5741.6	$5740 \pm 32$	$k_{eq}$	0.010189	$0.01019 \pm 0.00016$
$\ln(10^{10} A_s)$	3.0948	$3.095^{+0.028}_{-0.031}$	$D_{810}$	2524.3	$2519 \pm 30$	$100\theta_{eq}$	0.8240	$0.8244 \pm 0.0085$
$n_s$	0.9680	$0.967 \pm 0.010$	$D_{1420}$	812.1	$810 \pm 15$	$100\theta_{s,eq}$	0.45487	$0.4551 \pm 0.0045$
$A_{tSZ}$	0.02	—	$D_{2000}$	229.8	$229.1 \pm 5.9$	$r_{drag}/D_V(0.57)$	0.071872	$0.07191 \pm 0.00050$
$H_0$	67.93	$67.98 \pm 0.73$	$n_{s,0.002}$	0.9680	$0.967 \pm 0.010$	$H(0.57)$	92.98	$93.01 \pm 0.59$
$\Omega_\Lambda$	0.6959	$0.6963 \pm 0.0086$	$Y_P$	0.245430	$0.24543 \pm 0.00019$	$D_A(0.57)$	1384.5	$1384 \pm 11$
$\Omega_m$	0.3041	$0.3037 \pm 0.0086$	$Y_P^{BBN}$	0.246757	$0.24676 \pm 0.00019$	$F_{AP}(0.57)$	0.67415	$0.6740 \pm 0.0022$
$\Omega_m h^2$	0.14034	$0.1403 \pm 0.0023$	$10^5 D/H$	2.576	$2.575 \pm 0.079$	$f\sigma_8(0.57)$	0.4758	$0.475 \pm 0.011$
$\Omega_m h^3$	0.09534	$0.0954 \pm 0.0017$	Age/Gyr	13.819	$13.816 \pm 0.083$	$\sigma_8(0.57)$	0.6130	$0.613 \pm 0.012$
$\sigma_8$	0.8216	$0.821 \pm 0.017$	$z_*$	1089.573	$1089.56 \pm 0.50$	$\chi^2_{WMAP}$	7558.4	$7563.8 \pm 3.2$
$\sigma_8 \Omega_m^{0.5}$	0.4531	$0.453 \pm 0.013$	$r_*$	145.08	$145.09 \pm 0.72$	$\chi^2_{6DF}$	0.0009	$0.054 \pm 0.077$
$\sigma_8 \Omega_m^{0.25}$	0.6102	$0.610 \pm 0.015$	$100\theta_*$	1.03970	$1.0397^{+0.0022}_{-0.0019}$	$\chi^2_{MGS}$	1.61	$1.74 \pm 0.69$
$\sigma_8/h^{0.5}$	0.9969	$0.996 \pm 0.021$	$D_A/\text{Gpc}$	13.954	$13.955 \pm 0.090$	$\chi^2_{DR11CMAS}$	2.48	$3.10 \pm 0.91$
$\langle d^2 \rangle^{1/2}$	2.4769	$2.479 \pm 0.040$	$z_{drag}$	1059.93	$1060.0 \pm 1.0$	$\chi^2_{DR11LOWZ}$	0.334	$0.48 \pm 0.53$
$z_{re}$	10.41	$10.5 \pm 1.1$	$r_{drag}$	147.73	$147.74 \pm 0.84$	$\chi^2_{BAO}$	4.42	$5.4 \pm 1.4$

Best-fit  $\chi^2_{eff} = 7562.82$ ;  $\bar{\chi}^2_{eff} = 7569.13$ ;  $R - 1 = 0.01084$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMAS: 2.48 DR11LOWZ: 0.33 CMB - WMAP: 7558.39

## 2.81 base\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022226	$0.02222 \pm 0.00021$	$\Omega_m$	0.3162	$0.316 \pm 0.013$	$100\theta_*$	1.041047	$1.04105 \pm 0.00046$
$\Omega_c h^2$	0.11999	$0.1199 \pm 0.0021$	$\Omega_m h^2$	0.14286	$0.1428 \pm 0.0020$	$D_A/\text{Gpc}$	13.8845	$13.887 \pm 0.044$
$100\theta_{\text{MC}}$	1.040844	$1.04085 \pm 0.00047$	$\Omega_m h^3$	0.096022	$0.09599 \pm 0.00044$	$z_{\text{drag}}$	1059.589	$1059.57 \pm 0.44$
$\tau$	0.0731	$0.074^{+0.011}_{-0.013}$	$\sigma_8$	0.8268	$0.827 \pm 0.010$	$r_{\text{drag}}$	147.256	$147.29 \pm 0.47$
$\ln(10^{10} A_s)$	3.0810	$3.082^{+0.022}_{-0.025}$	$\sigma_8 \Omega_m^{0.5}$	0.4650	$0.465 \pm 0.013$	$k_D$	0.14058	$0.14054 \pm 0.00051$
$n_s$	0.9655	$0.9649 \pm 0.0059$	$\sigma_8 \Omega_m^{0.25}$	0.6200	$0.620 \pm 0.012$	$100\theta_D$	0.160949	$0.16097 \pm 0.00026$
$y_{\text{cal}}$	1.00031	$1.0004 \pm 0.0026$	$\sigma_8/h^{0.5}$	1.0085	$1.009 \pm 0.017$	$z_{\text{eq}}$	3398.5	$3396 \pm 47$
$A_{217}^{\text{CIB}}$	66.2	$63.8 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4904	$2.493 \pm 0.039$	$k_{\text{eq}}$	0.010372	$0.01037 \pm 0.00014$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$z_{\text{re}}$	9.55	$9.6 \pm 1.1$	$100\theta_{\text{eq}}$	0.8135	$0.8140 \pm 0.0088$
$A_{143}^{\text{tSZ}}$	7.02	$5.1 \pm 1.9$	$10^9 A_s$	2.178	$2.182^{+0.046}_{-0.054}$	$100\theta_{\text{s,eq}}$	0.44960	$0.4498 \pm 0.0046$
$A_{100}^{\text{PS}}$	252.6	$259 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8816	$1.881 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07132	$0.07135 \pm 0.00070$
$A_{143}^{\text{PS}}$	41.1	$44 \pm 8$	$D_{40}$	1234.6	$1237 \pm 15$	$H(0.57)$	92.843	$92.85 \pm 0.39$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39 \pm 10$	$D_{220}$	5714.8	$5718 \pm 42$	$D_A(0.57)$	1392.8	$1393 \pm 12$
$A_{217}^{\text{PS}}$	98.9	$98 \pm 10$	$D_{810}$	2535.4	$2535 \pm 14$	$F_{\text{AP}}(0.57)$	0.67722	$0.6772 \pm 0.0032$
$A^{\text{kSZ}}$	0.00	$< 4.60$	$D_{1420}$	815.1	$814.5 \pm 5.1$	$f\sigma_8(0.57)$	0.4819	$0.4819 \pm 0.0079$
$A_{100}^{\text{dustTT}}$	7.46	$7.4 \pm 1.9$	$D_{2000}$	230.46	$230.2 \pm 1.8$	$\sigma_8(0.57)$	0.6140	$0.6141^{+0.0067}_{-0.0078}$
$A_{143}^{\text{dustTT}}$	9.06	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9655	$0.9649 \pm 0.0059$	$f_{2000}^{143}$	29.56	$30.1 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.83	$17.2 \pm 4.2$	$Y_{\text{P}}$	0.245329	$0.245321 \pm 0.000098$	$f_{2000}^{143 \times 217}$	32.29	$32.5 \pm 2.0$
$A_{217}^{\text{dustTT}}$	82.3	$81.9 \pm 7.5$	$Y_{\text{P}}^{\text{BBN}}$	0.246655	$0.246648 \pm 0.000098$	$f_{2000}^{217}$	105.84	$106.2 \pm 2.0$
$c_{100}$	0.99793	$0.99789 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.6186	$2.621 \pm 0.041$	$\chi_{\text{WMAPTEB}}^2$	19734.15	$19735.4 \pm 2.2$
$c_{217}$	0.99597	$0.9959 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.8142	$13.814 \pm 0.036$	$\chi_{\text{plik}}^2$	764.1	$777.4 \pm 5.5$
$H_0$	67.21	$67.24 \pm 0.91$	$z_*$	1090.101	$1090.11 \pm 0.40$	$\chi_{\text{prior}}^2$	1.93	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6838	$0.684 \pm 0.013$	$r_*$	144.545	$144.57 \pm 0.47$	$\chi_{\text{CMB}}^2$	20498.2	$20512.8 \pm 5.5$

Best-fit  $\chi_{\text{eff}}^2 = 20500.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 20520.13$ ;  $R - 1 = 0.01203$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.15 plik\_dx11dr2\_HM\_v18\_TT: 764.08

## 2.82 base\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02228 \pm 0.00021$	$\Omega_m h^2$	$0.1412 \pm 0.0015$	$z_{\text{drag}}$	$1059.60 \pm 0.45$
$\Omega_c h^2$	$0.1183 \pm 0.0016$	$\Omega_m h^3$	$0.09593^{+0.00041}_{-0.00048}$	$r_{\text{drag}}$	$147.65 \pm 0.39$
$100\theta_{\text{MC}}$	$1.04108^{+0.00046}_{-0.00041}$	$\sigma_8$	$0.8172 \pm 0.0072$	$k_{\text{D}}$	$0.14021 \pm 0.00046$
$\tau$	$0.070^{+0.010}_{-0.012}$	$\sigma_8 \Omega_m^{0.5}$	$0.4520 \pm 0.0083$	$100\theta_{\text{D}}$	$0.16096 \pm 0.00026$
$\ln(10^{10} A_s)$	$3.070^{+0.019}_{-0.021}$	$\sigma_8 \Omega_m^{0.25}$	$0.6077 \pm 0.0073$	$z_{\text{eq}}$	$3359 \pm 37$
$n_s$	$0.9686 \pm 0.0052$	$\sigma_8/h^{0.5}$	$0.991 \pm 0.010$	$k_{\text{eq}}$	$0.01025 \pm 0.00011$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.452 \pm 0.024$	$100\theta_{\text{eq}}$	$0.8211 \pm 0.0071$
$A_{217}^{\text{CIB}}$	$64.3 \pm 6.6$	$z_{\text{re}}$	$9.18 \pm 0.98$	$100\theta_{\text{s,eq}}$	$0.4535 \pm 0.0036$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.154^{+0.039}_{-0.047}$	$r_{\text{drag}}/D_V(0.57)$	$0.07192 \pm 0.00056$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 2.0$	$10^9 A_s e^{-2\tau}$	$1.872 \pm 0.012$	$H(0.57)$	$93.13^{+0.32}_{-0.37}$
$A_{100}^{\text{PS}}$	$259 \pm 28$	$D_{40}$	$1225 \pm 13$	$D_{\text{A}}(0.57)$	$1383.3 \pm 9.9$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{220}$	$5717 \pm 42$	$F_{\text{AP}}(0.57)$	$0.6746 \pm 0.0025$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{810}$	$2532 \pm 14$	$f\sigma_8(0.57)$	$0.4737 \pm 0.0049$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$D_{1420}$	$814.7 \pm 5.1$	$\sigma_8(0.57)$	$0.6094^{+0.0054}_{-0.0063}$
$A^{\text{kSZ}}$	$< 4.81$	$D_{2000}$	$230.2 \pm 1.8$	$f_{2000}^{143}$	$30.3 \pm 2.9$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.8$	$n_{\text{s},0.002}$	$0.9686 \pm 0.0052$	$f_{2000}^{143 \times 217}$	$32.6 \pm 2.0$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.8$	$Y_{\text{P}}$	$0.245352 \pm 0.000096$	$f_{2000}^{217}$	$106.1 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.246678 \pm 0.000096$	$\chi_{\text{lensing}}^2$	$9.98 \pm 1.6$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.6$	$10^5 \text{D}/\text{H}$	$2.608 \pm 0.040$	$\chi_{\text{WMAPTEB}}^2$	$19734.0 \pm 1.5$
$c_{100}$	$0.99786 \pm 0.00078$	$\text{Age}/\text{Gyr}$	$13.794 \pm 0.032$	$\chi_{\text{plik}}^2$	$779.4 \pm 9.6$
$c_{217}$	$0.9960 \pm 0.0014$	$z_*$	$1089.88 \pm 0.35$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$H_0$	$67.95 \pm 0.74$	$r_*$	$144.95 \pm 0.38$	$\chi_{\text{CMB}}^2$	$20523.3 \pm 9.6$
$\Omega_{\Lambda}$	$0.6941 \pm 0.0098$	$100\theta_*$	$1.04127^{+0.00045}_{-0.00040}$		
$\Omega_{\text{m}}$	$0.3059 \pm 0.0098$	$D_{\text{A}}/\text{Gpc}$	$13.921 \pm 0.036$		

$$\bar{\chi}_{\text{eff}}^2 = 20530.75; R - 1 = 0.02755$$

### 2.83 base\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02226 \pm 0.00019$	$\Omega_m h^3$	$0.09599 \pm 0.00044$	$k_D$	$0.14040 \pm 0.00044$
$\Omega_c h^2$	$0.1191 \pm 0.0012$	$\sigma_8$	$0.8254^{+0.0097}_{-0.011}$	$100\theta_D$	$0.16095 \pm 0.00025$
$100\theta_{MC}$	$1.04097 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	$0.4601 \pm 0.0087$	$z_{eq}$	$3378 \pm 29$
$\tau$	$0.076^{+0.011}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	$0.6162 \pm 0.0091$	$k_{eq}$	$0.010309 \pm 0.000088$
$\ln(10^{10} A_s)$	$3.084^{+0.022}_{-0.025}$	$\sigma_8/h^{0.5}$	$1.004 \pm 0.014$	$100\theta_{eq}$	$0.8175 \pm 0.0053$
$n_s$	$0.9669 \pm 0.0044$	$\langle d^2 \rangle^{1/2}$	$2.482 \pm 0.032$	$100\theta_{s,eq}$	$0.4516 \pm 0.0028$
$y_{cal}$	$1.0004 \pm 0.0025$	$z_{re}$	$9.7 \pm 1.0$	$r_{drag}/D_V(0.57)$	$0.07163 \pm 0.00041$
$A_{217}^{CIB}$	$63.8 \pm 6.6$	$10^9 A_s$	$2.185^{+0.046}_{-0.056}$	$H(0.57)$	$92.99 \pm 0.26$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.012$	$D_A(0.57)$	$1387.8 \pm 7.4$
$A_{143}^{tSZ}$	$5.2 \pm 1.9$	$D_{40}$	$1233 \pm 13$	$F_{AP}(0.57)$	$0.6758 \pm 0.0019$
$A_{100}^{PS}$	$258 \pm 28$	$D_{220}$	$5721 \pm 41$	$f\sigma_8(0.57)$	$0.4797 \pm 0.0065$
$A_{143}^{PS}$	$44 \pm 8$	$D_{810}$	$2534 \pm 14$	$\sigma_8(0.57)$	$0.6142^{+0.0067}_{-0.0080}$
$A_{143 \times 217}^{PS}$	$39 \pm 10$	$D_{1420}$	$815.0 \pm 5.0$	$f_{2000}^{143}$	$30.0 \pm 2.8$
$A_{217}^{PS}$	$97 \pm 10$	$D_{2000}$	$230.4 \pm 1.7$	$f_{2000}^{143 \times 217}$	$32.4 \pm 2.0$
$A^{kSZ}$	$< 4.48$	$n_{s,0.002}$	$0.9669 \pm 0.0044$	$f_{2000}^{217}$	$106.0 \pm 1.9$
$A_{100}^{dustTT}$	$7.4 \pm 1.8$	$Y_P$	$0.245343 \pm 0.000087$	$\chi_{WMAPTEB}^2$	$19735.1 \pm 2.2$
$A_{143}^{dustTT}$	$9.0 \pm 1.8$	$Y_P^{BBN}$	$0.246669 \pm 0.000088$	$\chi_{plik}^2$	$777 \pm 12$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.2$	$10^5 D/H$	$2.612 \pm 0.036$	$\chi_{6DF}^2$	$0.064 \pm 0.083$
$A_{217}^{dustTT}$	$81.9 \pm 7.5$	$Age/Gyr$	$13.803 \pm 0.028$	$\chi_{MGS}^2$	$1.31 \pm 0.52$
$c_{100}$	$0.99789 \pm 0.00078$	$z_*$	$1089.98 \pm 0.29$	$\chi_{DR11CMass}^2$	$2.90 \pm 0.70$
$c_{217}$	$0.9959 \pm 0.0015$	$r_*$	$144.75 \pm 0.32$	$\chi_{DR11LOWZ}^2$	$0.78 \pm 0.61$
$H_0$	$67.60 \pm 0.55$	$100\theta_*$	$1.04116 \pm 0.00041$	$\chi_{prior}^2$	$7.3 \pm 3.6$
$\Omega_\Lambda$	$0.6892 \pm 0.0074$	$D_A/Gpc$	$13.903 \pm 0.031$	$\chi_{CMB}^2$	$20510 \pm 12$
$\Omega_m$	$0.3108 \pm 0.0074$	$z_{drag}$	$1059.62 \pm 0.43$	$\chi_{BAO}^2$	$5.1 \pm 1.0$
$\Omega_m h^2$	$0.1420 \pm 0.0012$	$r_{drag}$	$147.46 \pm 0.34$		

$$\bar{\chi}_{eff}^2 = 20524.89; R - 1 = 0.01550$$

## 2.84 base\_plikHM\_TT\_WMAPTEB\_post\_BAO\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02227 \pm 0.00019$	$\Omega_m h^3$	$0.09593 \pm 0.00044$	$k_D$	$0.14023 \pm 0.00042$
$\Omega_c h^2$	$0.1185 \pm 0.0011$	$\sigma_8$	$0.8171 \pm 0.0071$	$100\theta_D$	$0.16098 \pm 0.00025$
$100\theta_{MC}$	$1.04106^{+0.00044}_{-0.00037}$	$\sigma_8 \Omega_m^{0.5}$	$0.4528 \pm 0.0064$	$z_{eq}$	$3363 \pm 26$
$\tau$	$0.0689^{+0.0090}_{-0.010}$	$\sigma_8 \Omega_m^{0.25}$	$0.6083 \pm 0.0064$	$k_{eq}$	$0.010264 \pm 0.000080$
$\ln(10^{10} A_s)$	$3.068 \pm 0.018$	$\sigma_8/h^{0.5}$	$0.9920 \pm 0.0094$	$100\theta_{eq}$	$0.8202 \pm 0.0049$
$n_s$	$0.9681 \pm 0.0042$	$\langle d^2 \rangle^{1/2}$	$2.453 \pm 0.022$	$100\theta_{s,eq}$	$0.4531 \pm 0.0025$
$y_{cal}$	$1.0001 \pm 0.0025$	$z_{re}$	$9.09 \pm 0.87$	$r_{drag}/D_V(0.57)$	$0.07185 \pm 0.00038$
$A_{217}^{CIB}$	$64.4 \pm 6.7$	$10^9 A_s$	$2.150 \pm 0.038$	$H(0.57)$	$93.08 \pm 0.25$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.873 \pm 0.011$	$D_A(0.57)$	$1384.5 \pm 6.9$
$A_{143}^{tSZ}$	$5.1 \pm 2.0$	$D_{40}$	$1226 \pm 12$	$F_{AP}(0.57)$	$0.6749 \pm 0.0017$
$A_{100}^{PS}$	$260 \pm 28$	$D_{220}$	$5715 \pm 41$	$f\sigma_8(0.57)$	$0.4739 \pm 0.0045$
$A_{143}^{PS}$	$44 \pm 8$	$D_{810}$	$2531 \pm 14$	$\sigma_8(0.57)$	$0.6090 \pm 0.0054$
$A_{143 \times 217}^{PS}$	$39 \pm 10$	$D_{1420}$	$814.4 \pm 5.0$	$f_{2000}^{143}$	$30.4 \pm 2.8$
$A_{217}^{PS}$	$96 \pm 10$	$D_{2000}$	$230.1 \pm 1.7$	$f_{2000}^{143 \times 217}$	$32.7 \pm 2.0$
$A^{kSZ}$	$< 4.84$	$n_{s,0.002}$	$0.9681 \pm 0.0042$	$f_{2000}^{217}$	$106.2 \pm 2.0$
$A_{100}^{dustTT}$	$7.4 \pm 1.8$	$Y_P$	$0.245345 \pm 0.000088$	$\chi_{lensing}^2$	$9.9 \pm 1.4$
$A_{143}^{dustTT}$	$9.1 \pm 1.8$	$Y_P^{BBN}$	$0.246671 \pm 0.000088$	$\chi_{WMAPTEB}^2$	$19733.9 \pm 1.3$
$A_{143 \times 217}^{dustTT}$	$17.3 \pm 4.2$	$10^5 D/H$	$2.611 \pm 0.037$	$\chi_{plik}^2$	$779 \pm 11$
$A_{217}^{dustTT}$	$81.9 \pm 7.6$	$Age/Gyr$	$13.797 \pm 0.027$	$\chi_{6DF}^2$	$0.036 \pm 0.051$
$c_{100}$	$0.99785 \pm 0.00078$	$z_*$	$1089.92 \pm 0.29$	$\chi_{MGS}^2$	$1.58 \pm 0.51$
$c_{217}$	$0.9960 \pm 0.0015$	$r_*$	$144.91 \pm 0.29$	$\chi_{DR11CMass}^2$	$2.76 \pm 0.52$
$H_0$	$67.86 \pm 0.51$	$100\theta_*$	$1.04125 \pm 0.00039$	$\chi_{DR11LOWZ}^2$	$0.50 \pm 0.44$
$\Omega_\Lambda$	$0.6929 \pm 0.0067$	$D_A/Gpc$	$13.917 \pm 0.029$	$\chi_{prior}^2$	$7.5 \pm 3.6$
$\Omega_m$	$0.3071 \pm 0.0067$	$z_{drag}$	$1059.58 \pm 0.44$	$\chi_{CMB}^2$	$20520 \pm 11$
$\Omega_m h^2$	$0.1414 \pm 0.0011$	$r_{drag}$	$147.62 \pm 0.32$	$\chi_{BAO}^2$	$4.87 \pm 0.78$

$$\bar{\chi}_{eff}^2 = 20535.09; R - 1 = 0.02637$$

### 3 Alens

#### 3.1 base\_Alens\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022709	$0.02262 \pm 0.00029$	$\Omega_m$	0.2920	$0.295^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	13.9356	$13.933 \pm 0.048$
$\Omega_c h^2$	0.11625	$0.1166 \pm 0.0025$	$\Omega_m h^2$	0.13960	$0.1399 \pm 0.0023$	$z_{\text{drag}}$	1060.47	$1060.28 \pm 0.56$
$100\theta_{\text{MC}}$	1.04141	$1.04137 \pm 0.00053$	$\Omega_m h^3$	0.096518	$0.09641 \pm 0.00050$	$r_{\text{drag}}$	147.71	$147.71 \pm 0.51$
$\tau$	0.0636	$0.059 \pm 0.021$	$\sigma_8$	0.8047	$0.802 \pm 0.018$	$k_D$	0.14046	$0.14040 \pm 0.00052$
$A_L$	1.239	$1.224^{+0.096}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4349	$0.436 \pm 0.018$	$100\theta_D$	0.160496	$0.16060 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0541	$3.046 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.5916	$0.591 \pm 0.018$	$z_{\text{eq}}$	3321	$3328 \pm 56$
$n_s$	0.9767	$0.9740 \pm 0.0073$	$\sigma_8/h^{0.5}$	0.9678	$0.967 \pm 0.027$	$k_{\text{eq}}$	0.010135	$0.01016 \pm 0.00017$
$y_{\text{cal}}$	0.99997	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.664	$2.644 \pm 0.075$	$100\theta_{\text{eq}}$	0.8295	$0.828 \pm 0.011$
$A_{217}^{\text{CIB}}$	58.1	$61.2 \pm 6.7$	$z_{\text{re}}$	8.45	$8.0^{+2.3}_{-1.9}$	$100\theta_{s,\text{eq}}$	0.4576	$0.4569 \pm 0.0057$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.877	$> 0.405$	$10^9 A_s$	2.120	$2.105 \pm 0.087$	$r_{\text{drag}}/D_V(0.57)$	0.07268	$0.07255 \pm 0.00091$
$A_{143}^{\text{tSZ}}$	6.72	$5.6^{+2.0}_{-1.8}$	$10^9 A_s e^{-2\tau}$	1.8671	$1.868 \pm 0.015$	$H(0.57)$	93.75	$93.64^{+0.54}_{-0.61}$
$A_{100}^{\text{PS}}$	236.5	$247 \pm 30$	$D_{40}$	1208.1	$1213 \pm 18$	$D_A(0.57)$	1366.8	$1370 \pm 16$
$A_{143}^{\text{PS}}$	45.0	$38 \pm 8$	$D_{220}$	5740.6	$5740 \pm 42$	$F_{\text{AP}}(0.57)$	0.67102	$0.6717 \pm 0.0039$
$A_{143 \times 217}^{\text{PS}}$	52.9	$38 \pm 10$	$D_{810}$	2528.6	$2527 \pm 14$	$f\sigma_8(0.57)$	0.4627	$0.462 \pm 0.013$
$A_{217}^{\text{PS}}$	107.2	$98 \pm 10$	$D_{1420}$	816.0	$814.3 \pm 5.1$	$\sigma_8(0.57)$	0.6034	$0.601 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 3.41$	$D_{2000}$	233.36	$232.4 \pm 2.1$	$f_{2000}^{143}$	25.01	$27 \pm 3$
$A_{100}^{\text{dustTT}}$	7.38	$7.4 \pm 1.9$	$n_{s,0.002}$	0.9767	$0.9740 \pm 0.0073$	$f_{2000}^{143 \times 217}$	28.79	$29.6 \pm 2.4$
$A_{143}^{\text{dustTT}}$	8.98	$8.9 \pm 1.9$	$Y_P$	0.245542	$0.24550 \pm 0.00013$	$f_{2000}^{217}$	102.38	$103.5 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	18.15	$16.6 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246869	$0.24683 \pm 0.00013$	$\chi_{\text{lowTEB}}^2$	10493.41	$10494.9 \pm 1.7$
$A_{217}^{\text{dustTT}}$	83.0	$81.5 \pm 7.5$	$10^5 D/H$	2.528	$2.545 \pm 0.053$	$\chi_{\text{plik}}^2$	760.7	$775.1 \pm 5.6$
$c_{100}$	0.99801	$0.99791 \pm 0.00078$	Age/Gyr	13.732	$13.743 \pm 0.050$	$\chi_{\text{prior}}^2$	1.36	$7.2 \pm 3.5$
$c_{217}$	0.99534	$0.9956 \pm 0.0015$	$z_*$	1089.18	$1089.32 \pm 0.53$	$\chi_{\text{CMB}}^2$	11254.1	$11270.0 \pm 5.7$
$H_0$	69.14	$68.9 \pm 1.2$	$r_*$	145.15	$145.11 \pm 0.53$			
$\Omega_\Lambda$	0.7080	$0.705^{+0.016}_{-0.015}$	$100\theta_*$	1.04156	$1.04153 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.51$ ;  $\Delta\chi_{\text{eff}}^2 = -6.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.18$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.64$ ;  $R - 1 = 0.00926$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.41 ( $\Delta$  -3.06) plik\_dx11dr2\_HM\_v18\_TT: 760.74 ( $\Delta$  -2.64)



### 3.2 base\_Alens\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022545	$0.02249 \pm 0.00022$	$\Omega_m h^2$	0.14116	$0.1413 \pm 0.0013$	$r_{\text{drag}}$	147.435	$147.44 \pm 0.35$
$\Omega_c h^2$	0.11797	$0.1182 \pm 0.0013$	$\Omega_m h^3$	0.096393	$0.09634 \pm 0.00048$	$k_D$	0.140634	$0.14059 \pm 0.00045$
$100\theta_{\text{MC}}$	1.041138	$1.04115 \pm 0.00043$	$\sigma_8$	0.8089	$0.807 \pm 0.017$	$100\theta_D$	0.160617	$0.16069 \pm 0.00027$
$\tau$	0.0605	$0.058 \pm 0.021$	$\sigma_8 \Omega_m^{0.5}$	0.4450	$0.445 \pm 0.012$	$z_{\text{eq}}$	3357.8	$3362 \pm 30$
$A_L$	1.202	$1.188 \pm 0.087$	$\sigma_8 \Omega_m^{0.25}$	0.6000	$0.599 \pm 0.014$	$k_{\text{eq}}$	0.010248	$0.010262 \pm 0.000092$
$\ln(10^{10} A_s)$	3.0516	$3.046 \pm 0.041$	$\sigma_8/h^{0.5}$	0.9788	$0.978 \pm 0.022$	$100\theta_{\text{eq}}$	0.8220	$0.8210 \pm 0.0057$
$n_s$	0.97201	$0.9699 \pm 0.0046$	$\langle d^2 \rangle^{1/2}$	2.651	$2.633 \pm 0.073$	$100\theta_{s,\text{eq}}$	0.45378	$0.4533 \pm 0.0029$
$y_{\text{cal}}$	0.99999	$1.0001 \pm 0.0025$	$z_{\text{re}}$	8.23	$7.8_{-1.9}^{+2.4}$	$r_{\text{drag}}/D_V(0.57)$	0.072053	$0.07198 \pm 0.00045$
$A_{217}^{\text{CIB}}$	59.7	$61.7 \pm 6.7$	$10^9 A_s$	2.115	$2.104 \pm 0.086$	$H(0.57)$	93.362	$93.30 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.736	$> 0.386$	$10^9 A_s e^{-2\tau}$	1.8739	$1.874 \pm 0.012$	$D_A(0.57)$	1378.1	$1379.8 \pm 8.4$
$A_{143}^{\text{tSZ}}$	6.80	$5.6 \pm 1.9$	$D_{40}$	1216.8	$1222 \pm 14$	$F_{\text{AP}}(0.57)$	0.67378	$0.6742 \pm 0.0020$
$A_{100}^{\text{PS}}$	239.6	$249 \pm 30$	$D_{220}$	5730.8	$5732 \pm 41$	$f\sigma_8(0.57)$	0.4680	$0.467 \pm 0.011$
$A_{143}^{\text{PS}}$	44.7	$40 \pm 8$	$D_{810}$	2530.1	$2529 \pm 14$	$\sigma_8(0.57)$	0.6039	$0.602 \pm 0.012$
$A_{143 \times 217}^{\text{PS}}$	50.6	$38 \pm 10$	$D_{1420}$	815.0	$813.7 \pm 5.0$	$f_{2000}^{143}$	26.01	$27.4 \pm 3.0$
$A_{217}^{\text{PS}}$	106.0	$98 \pm 10$	$D_{2000}$	232.54	$231.8 \pm 1.9$	$f_{2000}^{143 \times 217}$	29.67	$30.3 \pm 2.2$
$A^{\text{kSZ}}$	0.01	$< 3.71$	$n_{s,0.002}$	0.97201	$0.9699 \pm 0.0046$	$f_{2000}^{217}$	103.16	$104.2 \pm 2.1$
$A_{100}^{\text{dustTT}}$	7.61	$7.4 \pm 1.9$	$Y_P$	0.245470	$0.245444 \pm 0.000098$	$\chi_{\text{lowTEB}}^2$	10494.08	$10495.5 \pm 1.5$
$A_{143}^{\text{dustTT}}$	9.07	$8.9 \pm 1.9$	$Y_P^{\text{BBN}}$	0.246797	$0.246771 \pm 0.000099$	$\chi_{\text{plik}}^2$	760.6	$774.2 \pm 5.4$
$A_{143 \times 217}^{\text{dustTT}}$	18.00	$16.8 \pm 4.2$	$10^5 D/H$	2.5586	$2.570 \pm 0.041$	$\chi_{6\text{DF}}^2$	0.0016	$0.046 \pm 0.065$
$A_{217}^{\text{dustTT}}$	82.6	$81.7 \pm 7.4$	$\text{Age/Gyr}$	13.7648	$13.771 \pm 0.032$	$\chi_{\text{MGS}}^2$	1.82	$1.78 \pm 0.64$
$c_{100}$	0.99804	$0.99791 \pm 0.00078$	$z_*$	1089.523	$1089.62 \pm 0.33$	$\chi_{\text{DR11CMass}}^2$	2.582	$2.99 \pm 0.82$
$c_{217}$	0.99539	$0.9956 \pm 0.0015$	$r_*$	144.825	$144.81 \pm 0.32$	$\chi_{\text{DR11LOWZ}}^2$	0.194	$0.41 \pm 0.45$
$H_0$	68.29	$68.16 \pm 0.62$	$100\theta_*$	1.041299	$1.04132 \pm 0.00042$	$\chi_{\text{prior}}^2$	1.41	$7.2 \pm 3.5$
$\Omega_\Lambda$	0.6973	$0.6957 \pm 0.0079$	$D_A/\text{Gpc}$	13.9081	$13.906 \pm 0.031$	$\chi_{\text{CMB}}^2$	11254.7	$11269.7 \pm 5.6$
$\Omega_m$	0.3027	$0.3043 \pm 0.0079$	$z_{\text{drag}}$	1060.200	$1060.08 \pm 0.49$	$\chi_{\text{BAO}}^2$	4.60	$5.2 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 11260.70$ ;  $\Delta\chi_{\text{eff}}^2 = -5.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.21$ ;  $R - 1 = 0.01751$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.02) MGS: 1.82 ( $\Delta$  0.54) DR11CMass: 2.58 ( $\Delta$  0.13) DR11LOWZ: 0.19 ( $\Delta$  -0.42) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.08 ( $\Delta$  -2.34) plik\_dx11dr2\_HM\_v18\_TT: 760.62 ( $\Delta$  -2.98)

### 3.3 base\_Alens\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022707	$0.02263 \pm 0.00028$	$\Omega_m$	0.2918	$0.295 \pm 0.014$	$D_A/\text{Gpc}$	13.9362	$13.933 \pm 0.045$
$\Omega_c h^2$	0.11621	$0.1166 \pm 0.0023$	$\Omega_m h^2$	0.13957	$0.1399 \pm 0.0021$	$z_{\text{drag}}$	1060.43	$1060.28 \pm 0.54$
$100\theta_{\text{MC}}$	1.04144	$1.04137 \pm 0.00051$	$\Omega_m h^3$	0.096521	$0.09641 \pm 0.00049$	$r_{\text{drag}}$	147.726	$147.71 \pm 0.48$
$\tau$	0.0618	$0.059 \pm 0.021$	$\sigma_8$	0.8032	$0.802 \pm 0.018$	$k_D$	0.14045	$0.14040 \pm 0.00051$
$A_L$	1.246	$1.225^{+0.093}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4339	$0.436 \pm 0.017$	$100\theta_D$	0.160504	$0.16060 \pm 0.00029$
$\ln(10^{10} A_s)$	3.0504	$3.046 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.5903	$0.591 \pm 0.017$	$z_{\text{eq}}$	3320	$3327 \pm 51$
$n_s$	0.9769	$0.9741 \pm 0.0068$	$\sigma_8/h^{0.5}$	0.9658	$0.966 \pm 0.026$	$k_{\text{eq}}$	0.010132	$0.01016 \pm 0.00016$
$y_{\text{cal}}$	0.99990	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.666	$2.644 \pm 0.074$	$100\theta_{\text{eq}}$	0.8297	$0.828 \pm 0.010$
$A_{217}^{\text{CIB}}$	57.8	$61.1 \pm 6.7$	$z_{\text{re}}$	8.28	$8.0^{+2.3}_{-1.9}$	$100\theta_{\text{s,eq}}$	0.4577	$0.4569 \pm 0.0052$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.968	$> 0.406$	$10^9 A_s$	2.112	$2.105 \pm 0.087$	$r_{\text{drag}}/D_V(0.57)$	0.07270	$0.07256 \pm 0.00083$
$A_{143}^{\text{tSZ}}$	6.59	$5.7^{+2.0}_{-1.8}$	$10^9 A_s e^{-2\tau}$	1.8667	$1.867 \pm 0.014$	$H(0.57)$	93.76	$93.65^{+0.49}_{-0.57}$
$A_{100}^{\text{PS}}$	236.1	$247 \pm 30$	$D_{40}$	1206.9	$1213 \pm 17$	$D_A(0.57)$	1366.5	$1370 \pm 15$
$A_{143}^{\text{PS}}$	46.3	$38 \pm 8$	$D_{220}$	5739.2	$5740 \pm 42$	$F_{\text{AP}}(0.57)$	0.67096	$0.6717 \pm 0.0036$
$A_{143 \times 217}^{\text{PS}}$	55.3	$38 \pm 10$	$D_{810}$	2528.5	$2527 \pm 14$	$f\sigma_8(0.57)$	0.4618	$0.462 \pm 0.012$
$A_{217}^{\text{PS}}$	108.0	$98 \pm 10$	$D_{1420}$	816.0	$814.3 \pm 5.0$	$\sigma_8(0.57)$	0.6023	$0.601 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 3.43$	$D_{2000}$	233.38	$232.4 \pm 2.0$	$f_{2000}^{143}$	24.88	$27 \pm 3$
$A_{100}^{\text{dustTT}}$	7.33	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9769	$0.9741 \pm 0.0068$	$f_{2000}^{143 \times 217}$	28.80	$29.6 \pm 2.4$
$A_{143}^{\text{dustTT}}$	8.96	$8.9 \pm 1.9$	$Y_{\text{P}}$	0.245541	$0.24550 \pm 0.00012$	$f_{2000}^{217}$	102.33	$103.5 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	18.09	$16.6 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246868	$0.24683 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10493.34	$10494.8 \pm 1.7$
$A_{217}^{\text{dustTT}}$	82.8	$81.5 \pm 7.4$	$10^5 D/H$	2.529	$2.545 \pm 0.050$	$\chi_{\text{plik}}^2$	760.9	$775.0 \pm 5.5$
$c_{100}$	0.99804	$0.99791 \pm 0.00078$	Age/Gyr	13.7314	$13.743 \pm 0.046$	$\chi_{\text{JLA}}^2$	706.498	$706.66 \pm 0.23$
$c_{217}$	0.99537	$0.9956 \pm 0.0015$	$z_*$	1089.18	$1089.31 \pm 0.49$	$\chi_{\text{prior}}^2$	1.25	$7.2 \pm 3.5$
$H_0$	69.16	$68.9 \pm 1.1$	$r_*$	145.158	$145.12 \pm 0.49$	$\chi_{\text{CMB}}^2$	11254.2	$11269.8 \pm 5.6$
$\Omega_\Lambda$	0.7082	$0.705 \pm 0.014$	$100\theta_*$	1.041589	$1.04154 \pm 0.00049$			

Best-fit  $\chi_{\text{eff}}^2 = 11961.99$ ;  $\Delta\chi_{\text{eff}}^2 = -6.75$ ;  $\bar{\chi}_{\text{eff}}^2 = 11983.68$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.92$ ;  $R - 1 = 0.01216$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.34 ( $\Delta$  -3.10) plik\_dx11dr2\_HM\_v18\_TT: 760.90 ( $\Delta$  -2.52) SN - JLA December\_2013: 706.50 ( $\Delta$  -0.27)

### 3.4 base\_Alens\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022745	$0.02266 \pm 0.00028$	$\Omega_m$	0.2896	$0.293^{+0.014}_{-0.015}$	$D_A/\text{Gpc}$	13.9429	$13.939 \pm 0.046$
$\Omega_c h^2$	0.11583	$0.1162 \pm 0.0024$	$\Omega_m h^2$	0.13922	$0.1396 \pm 0.0022$	$z_{\text{drag}}$	1060.51	$1060.33 \pm 0.55$
$100\theta_{\text{MC}}$	1.04146	$1.04143 \pm 0.00051$	$\Omega_m h^3$	0.096532	$0.09643 \pm 0.00049$	$r_{\text{drag}}$	147.785	$147.77 \pm 0.49$
$\tau$	0.0619	$0.060 \pm 0.021$	$\sigma_8$	0.8017	$0.801 \pm 0.018$	$k_D$	0.14041	$0.14036 \pm 0.00051$
$A_L$	1.252	$1.234^{+0.094}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4314	$0.433 \pm 0.017$	$100\theta_D$	0.160471	$0.16057 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0497	$3.046 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.5881	$0.589 \pm 0.017$	$z_{\text{eq}}$	3311	$3319 \pm 53$
$n_s$	0.9778	$0.9751 \pm 0.0070$	$\sigma_8/h^{0.5}$	0.9627	$0.964 \pm 0.026$	$k_{\text{eq}}$	0.010107	$0.01013 \pm 0.00016$
$y_{\text{cal}}$	1.00001	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.664	$2.648 \pm 0.074$	$100\theta_{\text{eq}}$	0.8314	$0.830 \pm 0.011$
$A_{217}^{\text{CIB}}$	57.8	$61.0 \pm 6.7$	$z_{\text{re}}$	8.27	$8.0^{+2.3}_{-1.9}$	$100\theta_{\text{s,eq}}$	0.4585	$0.4578 \pm 0.0054$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.949	$> 0.412$	$10^9 A_s$	2.111	$2.105 \pm 0.087$	$r_{\text{drag}}/D_V(0.57)$	0.07284	$0.07270 \pm 0.00086$
$A_{143}^{\text{tSZ}}$	6.72	$5.7^{+2.0}_{-1.8}$	$10^9 A_s e^{-2\tau}$	1.8653	$1.866 \pm 0.014$	$H(0.57)$	93.84	$93.73 \pm 0.53$
$A_{100}^{\text{PS}}$	234.7	$246 \pm 30$	$D_{40}$	1205.3	$1211 \pm 17$	$D_A(0.57)$	1364.2	$1367 \pm 15$
$A_{143}^{\text{PS}}$	45.4	$38 \pm 8$	$D_{220}$	5743.0	$5742 \pm 42$	$F_{\text{AP}}(0.57)$	0.67037	$0.6711 \pm 0.0037$
$A_{143 \times 217}^{\text{PS}}$	54.6	$38 \pm 10$	$D_{810}$	2528.3	$2526 \pm 14$	$f\sigma_8(0.57)$	0.4603	$0.461 \pm 0.013$
$A_{217}^{\text{PS}}$	107.7	$98 \pm 10$	$D_{1420}$	816.2	$814.5 \pm 5.0$	$\sigma_8(0.57)$	0.6018	$0.601 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 3.35$	$D_{2000}$	233.53	$232.6 \pm 2.0$	$f_{2000}^{143}$	24.69	$26 \pm 3$
$A_{100}^{\text{dustTT}}$	7.34	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9778	$0.9751 \pm 0.0070$	$f_{2000}^{143 \times 217}$	28.64	$29.4 \pm 2.4$
$A_{143}^{\text{dustTT}}$	9.01	$8.9 \pm 1.9$	$Y_{\text{P}}$	0.245558	$0.24552 \pm 0.00012$	$f_{2000}^{217}$	102.23	$103.4 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	18.15	$16.6 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246885	$0.24685 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10493.22	$10494.7 \pm 1.7$
$A_{217}^{\text{dustTT}}$	82.9	$81.5 \pm 7.4$	$10^5 D/H$	2.522	$2.538 \pm 0.051$	$\chi_{\text{plik}}^2$	761.0	$775.2 \pm 5.6$
$c_{100}$	0.99802	$0.99791 \pm 0.00078$	Age/Gyr	13.7251	$13.736 \pm 0.047$	$\chi_{\text{H070p6}}^2$	0.151	$0.32 \pm 0.34$
$c_{217}$	0.99532	$0.9955 \pm 0.0015$	$z_*$	1089.09	$1089.24 \pm 0.50$	$\chi_{\text{prior}}^2$	1.33	$7.2 \pm 3.5$
$H_0$	69.34	$69.1 \pm 1.1$	$r_*$	145.23	$145.19 \pm 0.51$	$\chi_{\text{CMB}}^2$	11254.2	$11269.9 \pm 5.6$
$\Omega_\Lambda$	0.7104	$0.707^{+0.015}_{-0.014}$	$100\theta_*$	1.041609	$1.04159 \pm 0.00050$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.65$ ;  $\Delta\chi_{\text{eff}}^2 = -7.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.40$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.30$ ;  $R - 1 = 0.01240$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10493.22 ( $\Delta$  -3.11) plik\_dx11dr2\_HM\_v18\_TT: 760.95 ( $\Delta$  -2.71) Hubble - H070p6: 0.15 ( $\Delta$  -0.68)

### 3.5 base\_Alens\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02263 \pm 0.00029$	$\Omega_m$	$0.294^{+0.015}_{-0.016}$	$D_A/\text{Gpc}$	$13.935 \pm 0.048$
$\Omega_c h^2$	$0.1166 \pm 0.0025$	$\Omega_m h^2$	$0.1398 \pm 0.0023$	$z_{\text{drag}}$	$1060.28 \pm 0.56$
$100\theta_{\text{MC}}$	$1.04138 \pm 0.00053$	$\Omega_m h^3$	$0.09640 \pm 0.00050$	$r_{\text{drag}}$	$147.73 \pm 0.51$
$\tau$	$0.068^{+0.010}_{-0.021}$	$\sigma_8$	$0.809^{+0.013}_{-0.017}$	$k_D$	$0.14038 \pm 0.00052$
$A_L$	$1.205 \pm 0.095$	$\sigma_8 \Omega_m^{0.5}$	$0.439 \pm 0.017$	$100\theta_D$	$0.16060 \pm 0.00030$
$\ln(10^{10} A_s)$	$3.063^{+0.023}_{-0.040}$	$\sigma_8 \Omega_m^{0.25}$	$0.596 \pm 0.017$	$z_{\text{eq}}$	$3326 \pm 56$
$n_s$	$0.9744 \pm 0.0073$	$\sigma_8/h^{0.5}$	$0.974^{+0.023}_{-0.026}$	$k_{\text{eq}}$	$0.01015 \pm 0.00017$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.643 \pm 0.075$	$100\theta_{\text{eq}}$	$0.828 \pm 0.011$
$A_{217}^{\text{CIB}}$	$61.0 \pm 6.8$	$z_{\text{re}}$	$8.82^{+0.82}_{-2.1}$	$100\theta_{\text{s,eq}}$	$0.4571 \pm 0.0056$
$\xi^{\text{tSZ} \times \text{CIB}}$	$> 0.409$	$10^9 A_s$	$2.139^{+0.047}_{-0.087}$	$r_{\text{drag}}/D_V(0.57)$	$0.07258 \pm 0.00091$
$A_{143}^{\text{tSZ}}$	$5.7^{+2.1}_{-1.8}$	$10^9 A_s e^{-2\tau}$	$1.867 \pm 0.015$	$H(0.57)$	$93.66^{+0.55}_{-0.61}$
$A_{100}^{\text{PS}}$	$247 \pm 30$	$D_{40}$	$1215 \pm 18$	$D_A(0.57)$	$1369 \pm 16$
$A_{143}^{\text{PS}}$	$38 \pm 8$	$D_{220}$	$5739 \pm 42$	$F_{\text{AP}}(0.57)$	$0.6716 \pm 0.0039$
$A_{143 \times 217}^{\text{PS}}$	$38 \pm 10$	$D_{810}$	$2527 \pm 14$	$f\sigma_8(0.57)$	$0.466 \pm 0.012$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$D_{1420}$	$814.4 \pm 5.1$	$\sigma_8(0.57)$	$0.6059^{+0.0077}_{-0.012}$
$A^{\text{kSZ}}$	$< 3.39$	$D_{2000}$	$232.4 \pm 2.1$	$f_{2000}^{143}$	$27 \pm 3$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	$0.9744 \pm 0.0073$	$f_{2000}^{143 \times 217}$	$29.6 \pm 2.4$
$A_{143}^{\text{dustTT}}$	$8.9 \pm 1.9$	$Y_{\text{P}}$	$0.24550 \pm 0.00013$	$f_{2000}^{217}$	$103.5 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	$16.7 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.24683 \pm 0.00013$	$\chi^2_{\text{lowTEB}}$	$10494.6 \pm 1.7$
$A_{217}^{\text{dustTT}}$	$81.6 \pm 7.4$	$10^5 \text{D/H}$	$2.545 \pm 0.053$	$\chi^2_{\text{plik}}$	$775.1 \pm 5.6$
$c_{100}$	$0.99791 \pm 0.00078$	$\text{Age/Gyr}$	$13.742 \pm 0.050$	$\chi^2_{\text{prior}}$	$7.2 \pm 3.5$
$c_{217}$	$0.9955 \pm 0.0015$	$z_*$	$1089.31 \pm 0.53$	$\chi^2_{\text{CMB}}$	$11269.7 \pm 5.7$
$H_0$	$69.0 \pm 1.2$	$r_*$	$145.13 \pm 0.53$		
$\Omega_\Lambda$	$0.706^{+0.016}_{-0.015}$	$100\theta_*$	$1.04154 \pm 0.00052$		

$$\bar{\chi}^2_{\text{eff}} = 11276.95; \Delta\bar{\chi}^2_{\text{eff}} = -4.69; R - 1 = 0.01160$$

### 3.6 base\_Alens\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022432	$0.02240 \pm 0.00017$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.304 \pm 0.084$	Age/Gyr	13.7840	$13.787 \pm 0.029$
$\Omega_c h^2$	0.11835	$0.1185 \pm 0.0016$	$A_{143}^{\text{dustTE}}$	0.153	$0.154 \pm 0.054$	$z_*$	1089.700	$1089.75 \pm 0.33$
$100\theta_{\text{MC}}$	1.040921	$1.04093 \pm 0.00033$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.335 \pm 0.080$	$r_*$	144.812	$144.80 \pm 0.34$
$\tau$	0.0581	$0.057 \pm 0.020$	$A_{217}^{\text{dustTE}}$	1.650	$1.65 \pm 0.26$	$100\theta_*$	1.041105	$1.04111 \pm 0.00032$
$A_L$	1.157	$1.153 \pm 0.077$	$c_{100}$	0.99825	$0.99820 \pm 0.00077$	$D_A/\text{Gpc}$	13.9095	$13.908 \pm 0.031$
$\ln(10^{10} A_s)$	3.0479	$3.046 \pm 0.040$	$c_{217}$	0.99562	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	1059.971	$1059.90 \pm 0.34$
$n_s$	0.9692	$0.9680 \pm 0.0051$	$H_0$	67.99	$67.92 \pm 0.73$	$r_{\text{drag}}$	147.460	$147.46 \pm 0.32$
$y_{\text{cal}}$	0.99988	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6941	$0.6931 \pm 0.0097$	$k_D$	0.140525	$0.14050 \pm 0.00033$
$A_{217}^{\text{CIB}}$	61.5	$62.3 \pm 6.6$	$\Omega_m$	0.3059	$0.3069 \pm 0.0097$	$100\theta_D$	0.160726	$0.16077 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.626	$> 0.396$	$\Omega_m h^2$	0.14142	$0.1415 \pm 0.0015$	$z_{\text{eq}}$	3364.1	$3367 \pm 35$
$A_{143}^{\text{tSZ}}$	6.87	$5.6_{-1.8}^{+2.0}$	$\Omega_m h^3$	0.096154	$0.09612 \pm 0.00030$	$k_{\text{eq}}$	0.010268	$0.01028 \pm 0.00011$
$A_{100}^{\text{PS}}$	246.7	$254 \pm 28$	$\sigma_8$	0.8081	$0.808 \pm 0.017$	$100\theta_{\text{eq}}$	0.8203	$0.8199 \pm 0.0068$
$A_{143}^{\text{PS}}$	45.1	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4470	$0.447 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45301	$0.4528 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	49.1	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6010	$0.601 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.07183 \pm 0.00054$
$A_{217}^{\text{PS}}$	104.8	$99 \pm 11$	$\sigma_8/h^{0.5}$	0.9800	$0.980 \pm 0.023$	$H(0.57)$	93.186	$93.15 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 3.39$	$\langle d^2 \rangle^{1/2}$	2.608	$2.602 \pm 0.058$	$D_A(0.57)$	1382.4	$1383.4 \pm 9.7$
$A_{100}^{\text{dustTT}}$	7.29	$7.4 \pm 1.9$	$z_{\text{re}}$	8.02	$7.8_{-1.9}^{+2.3}$	$F_{\text{AP}}(0.57)$	0.67461	$0.6749 \pm 0.0025$
$A_{143}^{\text{dustTT}}$	8.88	$8.8 \pm 1.8$	$10^9 A_s$	2.107	$2.104 \pm 0.085$	$f\sigma_8(0.57)$	0.4684	$0.468 \pm 0.011$
$A_{143 \times 217}^{\text{dustTT}}$	17.75	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8757	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.6025	$0.602 \pm 0.012$
$A_{217}^{\text{dustTT}}$	82.1	$81.3 \pm 7.4$	$D_{40}$	1222.3	$1226 \pm 15$	$f_{2000}^{143}$	27.06	$27.9 \pm 2.8$
$A_{100}^{\text{dustEE}}$	0.0818	$0.0816 \pm 0.0057$	$D_{220}$	5733.1	$5736 \pm 39$	$f_{2000}^{143 \times 217}$	30.57	$30.8 \pm 2.0$
$A_{100 \times 143}^{\text{dustEE}}$	0.04947	$0.0492 \pm 0.0050$	$D_{810}$	2530.9	$2531 \pm 14$	$f_{2000}^{217}$	104.05	$104.6 \pm 2.0$
$A_{100 \times 217}^{\text{dustEE}}$	0.1001	$0.099 \pm 0.032$	$D_{1420}$	814.20	$813.6 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	10494.58	$10495.8 \pm 1.6$
$A_{143}^{\text{dustEE}}$	0.1006	$0.1005 \pm 0.0069$	$D_{2000}$	231.56	$231.2 \pm 1.6$	$\chi_{\text{plik}}^2$	2429.3	$2448.8 \pm 6.6$
$A_{143 \times 217}^{\text{dustEE}}$	0.2247	$0.223 \pm 0.047$	$n_{\text{s},0.002}$	0.9692	$0.9680 \pm 0.0051$	$\chi_{\text{prior}}^2$	6.6	$19.1 \pm 5.4$
$A_{217}^{\text{dustEE}}$	0.648	$0.65 \pm 0.13$	$Y_P$	0.245420	$0.245405 \pm 0.000078$	$\chi_{\text{CMB}}^2$	12923.9	$12944.7 \pm 6.7$
$A_{100}^{\text{dustTE}}$	0.1407	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246747	$0.246732 \pm 0.000078$			
$A_{100 \times 143}^{\text{dustTE}}$	0.1306	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.5797	$2.586 \pm 0.033$			

Best-fit  $\chi_{\text{eff}}^2 = 12930.56$ ;  $\Delta\chi_{\text{eff}}^2 = -5.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12963.80$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.90$ ;  $R - 1 = 0.00817$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.58 ( $\Delta$  -2.36) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.35 ( $\Delta$  -2.30)

### 3.7 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022436	$0.02239 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.152	$0.154 \pm 0.054$	$r_*$	144.794	$144.79 \pm 0.25$
$\Omega_c h^2$	0.11840	$0.1185 \pm 0.0011$	$A_{143 \times 217}^{\text{dust}TE}$	0.331	$0.334 \pm 0.080$	$100\theta_*$	1.041114	$1.04111 \pm 0.00030$
$100\theta_{\text{MC}}$	1.040933	$1.04093 \pm 0.00030$	$A_{217}^{\text{dust}TE}$	1.644	$1.65 \pm 0.26$	$D_A/\text{Gpc}$	13.9076	$13.907 \pm 0.024$
$\tau$	0.0581	$0.057 \pm 0.020$	$c_{100}$	0.99829	$0.99820 \pm 0.00077$	$z_{\text{drag}}$	1059.971	$1059.89 \pm 0.32$
$A_L$	1.160	$1.151 \pm 0.073$	$c_{217}$	0.99553	$0.9958 \pm 0.0014$	$r_{\text{drag}}$	147.441	$147.45 \pm 0.25$
$\ln(10^{10} A_s)$	3.0483	$3.046 \pm 0.040$	$H_0$	67.98	$67.89 \pm 0.51$	$k_D$	0.140549	$0.14051 \pm 0.00030$
$n_s$	0.96967	$0.9678 \pm 0.0041$	$\Omega_\Lambda$	0.6938	$0.6927 \pm 0.0067$	$100\theta_D$	0.160720	$0.16077 \pm 0.00018$
$y_{\text{cal}}$	0.99992	$1.0001 \pm 0.0025$	$\Omega_m$	0.3062	$0.3073 \pm 0.0067$	$z_{\text{eq}}$	3365.6	$3368 \pm 25$
$A_{217}^{\text{CIB}}$	59.7	$62.3 \pm 6.5$	$\Omega_m h^2$	0.14149	$0.1416 \pm 0.0010$	$k_{\text{eq}}$	0.010272	$0.010280 \pm 0.000076$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.855	$> 0.390$	$\Omega_m h^3$	0.096176	$0.09612 \pm 0.00030$	$100\theta_{\text{eq}}$	0.82008	$0.8196 \pm 0.0048$
$A_{143}^{\text{tSZ}}$	6.62	$5.6 \pm 1.8$	$\sigma_8$	0.8086	$0.808 \pm 0.017$	$100\theta_{\text{s,eq}}$	0.45287	$0.4526 \pm 0.0024$
$A_{100}^{\text{PS}}$	245.4	$255 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4475	$0.448 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.071855	$0.07181 \pm 0.00038$
$A_{143}^{\text{PS}}$	48.4	$41 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6015	$0.601 \pm 0.013$	$H(0.57)$	93.185	$93.14 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	55.2	$40 \pm 10$	$\sigma_8/h^{0.5}$	0.9808	$0.980 \pm 0.021$	$D_A(0.57)$	1382.5	$1383.8 \pm 6.8$
$A_{217}^{\text{PS}}$	107.9	$99 \pm 11$	$\langle d^2 \rangle^{1/2}$	2.612	$2.601 \pm 0.058$	$F_{\text{AP}}(0.57)$	0.67468	$0.6749 \pm 0.0017$
$A^{\text{kSZ}}$	0.00	$< 3.40$	$z_{\text{re}}$	8.02	$7.8_{-1.9}^{+2.3}$	$f\sigma_8(0.57)$	0.4688	$0.469 \pm 0.010$
$A_{100}^{\text{dust}TT}$	7.29	$7.4 \pm 1.9$	$10^9 A_s$	2.108	$2.104 \pm 0.085$	$\sigma_8(0.57)$	0.6028	$0.602 \pm 0.012$
$A_{143}^{\text{dust}TT}$	8.86	$8.8 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8767	$1.877 \pm 0.011$	$f_{2000}^{143}$	26.65	$27.9 \pm 2.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.99	$16.6 \pm 4.1$	$D_{40}$	1221.5	$1227 \pm 13$	$f_{2000}^{143 \times 217}$	30.35	$30.9 \pm 2.0$
$A_{217}^{\text{dust}TT}$	82.4	$81.3 \pm 7.4$	$D_{220}$	5732.4	$5736 \pm 39$	$f_{2000}^{217}$	103.76	$104.7 \pm 1.9$
$A_{100}^{\text{dust}EE}$	0.0818	$0.0815 \pm 0.0057$	$D_{810}$	2532.3	$2531 \pm 14$	$\chi_{\text{lowTEB}}^2$	10494.50	$10495.9 \pm 1.5$
$A_{100 \times 143}^{\text{dust}EE}$	0.04932	$0.0492 \pm 0.0050$	$D_{1420}$	814.91	$813.6 \pm 4.7$	$\chi_{\text{plik}}^2$	2429.5	$2448.4 \pm 6.5$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.0996 \pm 0.032$	$D_{2000}$	231.85	$231.2 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0029	$0.038 \pm 0.052$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1005 \pm 0.0069$	$n_{s,0.002}$	0.96967	$0.9678 \pm 0.0041$	$\chi_{\text{MGS}}^2$	1.54	$1.53 \pm 0.51$
$A_{143 \times 217}^{\text{dust}EE}$	0.2226	$0.223 \pm 0.047$	$Y_P$	0.245422	$0.245403 \pm 0.000067$	$\chi_{\text{DR11CMass}}^2$	2.426	$2.76 \pm 0.50$
$A_{217}^{\text{dust}EE}$	0.646	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246748	$0.246729 \pm 0.000067$	$\chi_{\text{DR11LOWZ}}^2$	0.373	$0.54 \pm 0.45$
$A_{100}^{\text{dust}TE}$	0.1408	$0.141 \pm 0.038$	$10^5 D/H$	2.5790	$2.587 \pm 0.028$	$\chi_{\text{prior}}^2$	6.5	$19.1 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.131 \pm 0.029$	Age/Gyr	13.7836	$13.789 \pm 0.023$	$\chi_{\text{CMB}}^2$	12924.0	$12944.2 \pm 6.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.085$	$z_*$	1089.700	$1089.76 \pm 0.25$	$\chi_{\text{BAO}}^2$	4.342	$4.87 \pm 0.74$

Best-fit  $\chi_{\text{eff}}^2 = 12934.81$ ;  $\Delta\chi_{\text{eff}}^2 = -5.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.25$ ;  $R - 1 = 0.00741$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.03) MGS: 1.54 ( $\Delta$  0.32) DR11CMass: 2.43 ( $\Delta$  -0.07) DR11LOWZ: 0.37 ( $\Delta$  -0.31) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10494.50 ( $\Delta$  -2.92) plik.dx11dr2\_HM\_v18\_TTTEEE: 2429.50 ( $\Delta$  -2.03)

### 3.8 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022465	$0.02241 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.306	$0.304 \pm 0.085$	Age/Gyr	13.7783	$13.785 \pm 0.028$
$\Omega_c h^2$	0.11809	$0.1183 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.152	$0.154 \pm 0.054$	$z_*$	1089.635	$1089.72 \pm 0.32$
$100\theta_{\text{MC}}$	1.040976	$1.04095 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.333	$0.334 \pm 0.080$	$r_*$	144.853	$144.83 \pm 0.33$
$\tau$	0.0586	$0.057 \pm 0.020$	$A_{217}^{\text{dust}TE}$	1.657	$1.65 \pm 0.26$	$100\theta_*$	1.041145	$1.04113 \pm 0.00032$
$A_L$	1.168	$1.156_{-0.082}^{+0.074}$	$c_{100}$	0.99829	$0.99820 \pm 0.00077$	$D_A/\text{Gpc}$	13.9129	$13.911 \pm 0.030$
$\ln(10^{10} A_s)$	3.0482	$3.046 \pm 0.040$	$c_{217}$	0.99551	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	1060.009	$1059.91 \pm 0.34$
$n_s$	0.97058	$0.9684 \pm 0.0050$	$H_0$	68.12	$68.00 \pm 0.70$	$r_{\text{drag}}$	147.493	$147.49 \pm 0.32$
$y_{\text{cal}}$	0.99966	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6957	$0.6940 \pm 0.0093$	$k_D$	0.140516	$0.14048 \pm 0.00033$
$A_{217}^{\text{CIB}}$	59.3	$62.2 \pm 6.5$	$\Omega_m$	0.3043	$0.3060 \pm 0.0093$	$100\theta_D$	0.160697	$0.16076 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.888	$> 0.393$	$\Omega_m h^2$	0.14120	$0.1414 \pm 0.0014$	$z_{\text{eq}}$	3358.9	$3363 \pm 34$
$A_{143}^{\text{tSZ}}$	6.62	$5.6 \pm 1.8$	$\Omega_m h^3$	0.096190	$0.09612 \pm 0.00030$	$k_{\text{eq}}$	0.010252	$0.01026 \pm 0.00010$
$A_{100}^{\text{PS}}$	243.9	$254 \pm 28$	$\sigma_8$	0.8077	$0.807 \pm 0.017$	$100\theta_{\text{eq}}$	0.8214	$0.8205 \pm 0.0066$
$A_{143}^{\text{PS}}$	48.2	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4455	$0.446 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45355	$0.4531 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	55.7	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.5999	$0.600 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.07189 \pm 0.00053$
$A_{217}^{\text{PS}}$	108.1	$99 \pm 11$	$\sigma_8/h^{0.5}$	0.9785	$0.979 \pm 0.022$	$H(0.57)$	93.248	$93.19 \pm 0.31$
$A^{\text{kSZ}}$	0.00	$< 3.36$	$\langle d^2 \rangle^{1/2}$	2.614	$2.603 \pm 0.058$	$D_A(0.57)$	1380.6	$1382.4 \pm 9.4$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$z_{\text{re}}$	8.06	$7.8_{-1.9}^{+2.3}$	$F_{\text{AP}}(0.57)$	0.67419	$0.6746 \pm 0.0024$
$A_{143}^{\text{dust}TT}$	8.90	$8.8 \pm 1.8$	$10^9 A_s$	2.108	$2.104 \pm 0.084$	$f\sigma_8(0.57)$	0.4677	$0.468 \pm 0.011$
$A_{143 \times 217}^{\text{dust}TT}$	18.10	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8745	$1.876 \pm 0.012$	$\sigma_8(0.57)$	0.6026	$0.602 \pm 0.012$
$A_{217}^{\text{dust}TT}$	82.6	$81.3 \pm 7.4$	$D_{40}$	1219.1	$1225 \pm 15$	$f_{2000}^{143}$	26.35	$27.8 \pm 2.8$
$A_{100}^{\text{dust}EE}$	0.0818	$0.0816 \pm 0.0057$	$D_{220}$	5730.6	$5737 \pm 39$	$f_{2000}^{143 \times 217}$	30.14	$30.8 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.0496	$0.0492 \pm 0.0050$	$D_{810}$	2530.7	$2531 \pm 14$	$f_{2000}^{217}$	103.54	$104.6 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.099 \pm 0.032$	$D_{1420}$	814.67	$813.7 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	10494.33	$10495.8 \pm 1.6$
$A_{143}^{\text{dust}EE}$	0.1010	$0.1005 \pm 0.0069$	$D_{2000}$	231.90	$231.3 \pm 1.6$	$\chi_{\text{plik}}^2$	2429.7	$2448.9 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2251	$0.223 \pm 0.047$	$n_{\text{s},0.002}$	0.97058	$0.9684 \pm 0.0050$	$\chi_{\text{JLA}}^2$	706.581	$706.68 \pm 0.22$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245434	$0.245412 \pm 0.000076$	$\chi_{\text{prior}}^2$	6.4	$19.1 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1396	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246761	$0.246738 \pm 0.000077$	$\chi_{\text{CMB}}^2$	12924.0	$12944.6 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1310	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.5736	$2.583 \pm 0.032$			

Best-fit  $\chi_{\text{eff}}^2 = 13637.05$ ;  $\Delta\chi_{\text{eff}}^2 = -5.34$ ;  $\bar{\chi}_{\text{eff}}^2 = 13670.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.19$ ;  $R - 1 = 0.00864$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.33 ( $\Delta$  -3.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.70 ( $\Delta$  -1.92) SN - JLA December\_2013: 706.58 ( $\Delta$  -0.28)

### 3.9 base\_Alens\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022484	$0.02242 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.304 \pm 0.084$	Age/Gyr	13.7750	$13.783 \pm 0.029$
$\Omega_c h^2$	0.11791	$0.1182 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.150	$0.154 \pm 0.054$	$z_*$	1089.594	$1089.70 \pm 0.32$
$100\theta_{\text{MC}}$	1.040994	$1.04096 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.331	$0.334 \pm 0.080$	$r_*$	144.886	$144.85 \pm 0.33$
$\tau$	0.0582	$0.057 \pm 0.020$	$A_{217}^{\text{dust}TE}$	1.647	$1.65 \pm 0.26$	$100\theta_*$	1.041163	$1.04114 \pm 0.00032$
$A_L$	1.177	$1.158^{+0.074}_{-0.083}$	$c_{100}$	0.99829	$0.99820 \pm 0.00077$	$D_A/\text{Gpc}$	13.9158	$13.913 \pm 0.031$
$\ln(10^{10} A_s)$	3.0475	$3.046 \pm 0.040$	$c_{217}$	0.99551	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	1060.047	$1059.93 \pm 0.34$
$n_s$	0.97123	$0.9686 \pm 0.0050$	$H_0$	68.21	$68.05 \pm 0.71$	$r_{\text{drag}}$	147.520	$147.50 \pm 0.32$
$y_{\text{cal}}$	0.99986	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6969	$0.6947 \pm 0.0094$	$k_D$	0.140501	$0.14047 \pm 0.00033$
$A_{217}^{\text{CIB}}$	58.5	$62.2 \pm 6.5$	$\Omega_m$	0.3031	$0.3053 \pm 0.0094$	$100\theta_D$	0.160680	$0.16075 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.998	$> 0.394$	$\Omega_m h^2$	0.14104	$0.1413 \pm 0.0014$	$z_{\text{eq}}$	3354.9	$3361 \pm 34$
$A_{143}^{\text{tSZ}}$	6.61	$5.6 \pm 1.8$	$\Omega_m h^3$	0.096203	$0.09613 \pm 0.00030$	$k_{\text{eq}}$	0.010240	$0.01026 \pm 0.00011$
$A_{100}^{\text{PS}}$	242.4	$254 \pm 28$	$\sigma_8$	0.8069	$0.807 \pm 0.017$	$100\theta_{\text{eq}}$	0.8222	$0.8210 \pm 0.0067$
$A_{143}^{\text{PS}}$	49.5	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4443	$0.446 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45395	$0.4533 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	58.6	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.5987	$0.600 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07203	$0.07192 \pm 0.00054$
$A_{217}^{\text{PS}}$	109.3	$99 \pm 11$	$\sigma_8/h^{0.5}$	0.9770	$0.978 \pm 0.022$	$H(0.57)$	93.287	$93.21 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 3.34$	$\langle d^2 \rangle^{1/2}$	2.620	$2.604 \pm 0.058$	$D_A(0.57)$	1379.4	$1381.7 \pm 9.5$
$A_{100}^{\text{dust}TT}$	7.31	$7.4 \pm 1.9$	$z_{\text{re}}$	8.02	$7.8^{+2.3}_{-1.9}$	$F_{\text{AP}}(0.57)$	0.67390	$0.6744 \pm 0.0024$
$A_{143}^{\text{dust}TT}$	8.88	$8.8 \pm 1.8$	$10^9 A_s$	2.106	$2.104 \pm 0.084$	$f\sigma_8(0.57)$	0.4670	$0.467 \pm 0.011$
$A_{143 \times 217}^{\text{dust}TT}$	18.31	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8747	$1.875 \pm 0.012$	$\sigma_8(0.57)$	0.6023	$0.602 \pm 0.012$
$A_{217}^{\text{dust}TT}$	82.8	$81.3 \pm 7.4$	$D_{40}$	1218.1	$1225 \pm 15$	$f_{2000}^{143}$	26.09	$27.7 \pm 2.8$
$A_{100}^{\text{dust}EE}$	0.0818	$0.0816 \pm 0.0057$	$D_{220}$	5733.8	$5738 \pm 39$	$f_{2000}^{143 \times 217}$	29.99	$30.7 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.0496	$0.0493 \pm 0.0050$	$D_{810}$	2531.8	$2530 \pm 14$	$f_{2000}^{217}$	103.35	$104.5 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0984	$0.099 \pm 0.032$	$D_{1420}$	815.22	$813.7 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	10494.22	$10495.7 \pm 1.6$
$A_{143}^{\text{dust}EE}$	0.1009	$0.1006 \pm 0.0069$	$D_{2000}$	232.16	$231.3 \pm 1.6$	$\chi_{\text{plik}}^2$	2429.8	$2448.9 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2236	$0.223 \pm 0.047$	$n_{s,0.002}$	0.97123	$0.9686 \pm 0.0050$	$\chi_{\text{H070p6}}^2$	0.520	$0.64 \pm 0.33$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$Y_P$	0.245443	$0.245416 \pm 0.000077$	$\chi_{\text{prior}}^2$	6.5	$19.2 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1407	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246770	$0.246743 \pm 0.000077$	$\chi_{\text{CMB}}^2$	12924.0	$12944.6 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1304	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.5700	$2.581 \pm 0.032$			

Best-fit  $\chi_{\text{eff}}^2 = 12931.01$ ;  $\Delta\chi_{\text{eff}}^2 = -5.46$ ;  $\bar{\chi}_{\text{eff}}^2 = 12964.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.33$ ;  $R - 1 = 0.00877$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d.2014\_10\_03.v5c\_Ap: 10494.22 ( $\Delta$  -2.78) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.81 ( $\Delta$  -1.95) Hubble - H070p6: 0.52 ( $\Delta$  -0.38)



### 3.10 base\_Alens\_plikHM\_TTTEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02240 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	Age/Gyr	$13.787 \pm 0.029$
$\Omega_c h^2$	$0.1184 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	$z_*$	$1089.74 \pm 0.33$
$100\theta_{\text{MC}}$	$1.04093 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	$0.334 \pm 0.081$	$r_*$	$144.82 \pm 0.34$
$\tau$	$0.0655^{+0.0096}_{-0.020}$	$A_{217}^{\text{dust}TE}$	$1.65 \pm 0.26$	$100\theta_*$	$1.04111 \pm 0.00032$
$A_L$	$1.133 \pm 0.069$	$c_{100}$	$0.99819 \pm 0.00077$	$D_A/\text{Gpc}$	$13.910 \pm 0.031$
$\ln(10^{10} A_s)$	$3.063^{+0.021}_{-0.038}$	$c_{217}$	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	$1059.90 \pm 0.34$
$n_s$	$0.9683 \pm 0.0051$	$H_0$	$67.94 \pm 0.73$	$r_{\text{drag}}$	$147.47 \pm 0.33$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	$0.6934 \pm 0.0098$	$k_D$	$0.14049 \pm 0.00033$
$A_{217}^{\text{CIB}}$	$62.2 \pm 6.5$	$\Omega_m$	$0.3066 \pm 0.0098$	$100\theta_D$	$0.16077 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	$> 0.392$	$\Omega_m h^2$	$0.1415 \pm 0.0015$	$z_{\text{eq}}$	$3365 \pm 35$
$A_{143}^{\text{tSZ}}$	$5.6 \pm 1.8$	$\Omega_m h^3$	$0.09611 \pm 0.00030$	$k_{\text{eq}}$	$0.01027 \pm 0.00011$
$A_{100}^{\text{PS}}$	$254 \pm 28$	$\sigma_8$	$0.814^{+0.011}_{-0.016}$	$100\theta_{\text{eq}}$	$0.8201 \pm 0.0069$
$A_{143}^{\text{PS}}$	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.451 \pm 0.012$	$100\theta_{s,\text{eq}}$	$0.4529 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.606^{+0.012}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	$0.07185 \pm 0.00055$
$A_{217}^{\text{PS}}$	$99 \pm 11$	$\sigma_8/h^{0.5}$	$0.988^{+0.017}_{-0.021}$	$H(0.57)$	$93.16 \pm 0.32$
$A^{\text{kSZ}}$	$< 3.35$	$\langle d^2 \rangle^{1/2}$	$2.602 \pm 0.058$	$D_A(0.57)$	$1383.1 \pm 9.8$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.8$	$z_{\text{re}}$	$8.70^{+0.72}_{-2.1}$	$F_{\text{AP}}(0.57)$	$0.6748 \pm 0.0025$
$A_{143}^{\text{dust}TT}$	$8.8 \pm 1.8$	$10^9 A_s$	$2.140^{+0.044}_{-0.082}$	$f\sigma_8(0.57)$	$0.4721^{+0.0082}_{-0.010}$
$A_{143 \times 217}^{\text{dust}TT}$	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	$1.876 \pm 0.012$	$\sigma_8(0.57)$	$0.6070^{+0.0068}_{-0.012}$
$A_{217}^{\text{dust}TT}$	$81.3 \pm 7.4$	$D_{40}$	$1228 \pm 15$	$f_{2000}^{143}$	$27.8 \pm 2.8$
$A_{100}^{\text{dust}EE}$	$0.0815 \pm 0.0057$	$D_{220}$	$5735 \pm 39$	$f_{2000}^{143 \times 217}$	$30.8 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0492 \pm 0.0050$	$D_{810}$	$2531 \pm 14$	$f_{2000}^{217}$	$104.6 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.099 \pm 0.032$	$D_{1420}$	$813.7 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	$10495.6 \pm 1.6$
$A_{143}^{\text{dust}EE}$	$0.1005 \pm 0.0069$	$D_{2000}$	$231.3 \pm 1.6$	$\chi_{\text{plik}}^2$	$2448.8 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.047$	$n_{s,0.002}$	$0.9683 \pm 0.0051$	$\chi_{\text{prior}}^2$	$19.1 \pm 5.5$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.245406 \pm 0.000078$	$\chi_{\text{CMB}}^2$	$12944.4 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246733 \pm 0.000078$		
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$10^5 \text{D/H}$	$2.585 \pm 0.033$		

$$\bar{\chi}_{\text{eff}}^2 = 12963.55; \Delta\bar{\chi}_{\text{eff}}^2 = -4.13; R - 1 = 0.01233$$

### 3.11 base\_Alens\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022552	$0.02253 \pm 0.00032$	$\sigma_8$	0.8074	$0.808 \pm 0.020$	$100\theta_*$	1.04127	$1.04128 \pm 0.00052$
$\Omega_c h^2$	0.11699	$0.1172 \pm 0.0022$	$\sigma_8 \Omega_m^{0.5}$	0.4404	$0.442 \pm 0.016$	$D_A/\text{Gpc}$	13.9325	$13.930 \pm 0.046$
$100\theta_{\text{MC}}$	1.04110	$1.04111 \pm 0.00053$	$\sigma_8 \Omega_m^{0.25}$	0.5963	$0.597 \pm 0.017$	$z_{\text{drag}}$	1060.12	$1060.10 \pm 0.66$
$\tau$	0.0597	$0.059 \pm 0.021$	$\sigma_8/h^{0.5}$	0.9745	$0.976 \pm 0.026$	$r_{\text{drag}}$	147.692	$147.67 \pm 0.50$
$A_L$	1.122	$1.13 \pm 0.20$	$\langle d^2 \rangle^{1/2}$	2.527	$2.53_{-0.18}^{+0.22}$	$k_D$	0.14037	$0.14037 \pm 0.00059$
$\ln(10^{10} A_s)$	3.0489	$3.049 \pm 0.045$	$z_{\text{re}}$	8.13	$8.0_{-1.9}^{+2.4}$	$100\theta_D$	0.160635	$0.16067_{-0.00041}^{+0.00036}$
$n_s$	0.9819	$0.981 \pm 0.015$	$10^9 A_s$	2.109	$2.111_{-0.10}^{+0.092}$	$z_{\text{eq}}$	3334.6	$3338 \pm 49$
$y_{\text{cal}}$	0.99975	$1.0001 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8717	$1.873 \pm 0.023$	$k_{\text{eq}}$	0.010177	$0.01019 \pm 0.00015$
$A_{100}^{\text{dustTE}}$	0.1281	$0.136 \pm 0.038$	$D_{40}$	1192.6	$1195 \pm 27$	$100\theta_{\text{eq}}$	0.8262	$0.8256 \pm 0.0097$
$A_{100 \times 143}^{\text{dustTE}}$	0.1332	$0.133 \pm 0.029$	$D_{220}$	5696	$5696 \pm 59$	$100\theta_{s,\text{eq}}$	0.45600	$0.4557 \pm 0.0049$
$A_{100 \times 217}^{\text{dustTE}}$	0.310	$0.303 \pm 0.084$	$D_{810}$	2541.4	$2542 \pm 34$	$r_{\text{drag}}/D_V(0.57)$	0.07235	$0.07231 \pm 0.00078$
$A_{143}^{\text{dustTE}}$	0.152	$0.151 \pm 0.054$	$D_{1420}$	823.3	$823 \pm 16$	$H(0.57)$	93.47	$93.44 \pm 0.49$
$A_{143 \times 217}^{\text{dustTE}}$	0.355	$0.335 \pm 0.081$	$D_{2000}$	234.7	$234.7 \pm 7.2$	$D_A(0.57)$	1373.8	$1375 \pm 14$
$A_{217}^{\text{dustTE}}$	1.687	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9819	$0.981 \pm 0.015$	$F_{\text{AP}}(0.57)$	0.67246	$0.6728 \pm 0.0034$
$c_{100}$	0.99952	$0.99926 \pm 0.00099$	$Y_{\text{P}}$	0.245473	$0.24546 \pm 0.00014$	$f\sigma_8(0.57)$	0.4658	$0.466 \pm 0.012$
$H_0$	68.64	$68.6 \pm 1.0$	$Y_{\text{P}}^{\text{BBN}}$	0.246800	$0.24679 \pm 0.00014$	$\sigma_8(0.57)$	0.6040	$0.604 \pm 0.015$
$\Omega_\Lambda$	0.7024	$0.701 \pm 0.013$	$10^5 \text{D}/\text{H}$	2.557	$2.563 \pm 0.059$	$\chi_{\text{lowTEB}}^2$	10492.62	$10494.1 \pm 2.0$
$\Omega_m$	0.2976	$0.299 \pm 0.013$	$\text{Age}/\text{Gyr}$	13.7606	$13.763 \pm 0.047$	$\chi_{\text{plikTE}}^2$	931.99	$939.8 \pm 4.3$
$\Omega_m h^2$	0.14019	$0.1403 \pm 0.0021$	$z_*$	1089.43	$1089.48 \pm 0.52$	$\chi_{\text{prior}}^2$	2.17	$7.9 \pm 3.7$
$\Omega_m h^3$	0.09622	$0.09621 \pm 0.00058$	$r_*$	145.075	$145.05 \pm 0.49$	$\chi_{\text{CMB}}^2$	11424.61	$11433.9 \pm 4.5$

Best-fit  $\chi_{\text{eff}}^2 = 11426.78$ ;  $\Delta\chi_{\text{eff}}^2 = -0.37$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.75$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.57$ ;  $R - 1 = 0.00876$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.62 ( $\Delta$  -0.87) plik\_dx11dr2\_HM\_v18\_TE: 931.99 ( $\Delta$  0.26)

### 3.12 base\_Alens\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02494	$0.0251 \pm 0.0014$	$\sigma_8 \Omega_m^{0.5}$	0.3926	$0.391^{+0.029}_{-0.034}$	$D_A/\text{Gpc}$	13.957	$13.956 \pm 0.063$
$\Omega_c h^2$	0.10965	$0.1093 \pm 0.0046$	$\sigma_8 \Omega_m^{0.25}$	0.5533	$0.551 \pm 0.030$	$z_{\text{drag}}$	1064.93	$1065.1 \pm 2.7$
$100\theta_{\text{MC}}$	1.04009	$1.04015 \pm 0.00094$	$\sigma_8/h^{0.5}$	0.9124	$0.909 \pm 0.045$	$r_{\text{drag}}$	147.04	$147.00 \pm 0.81$
$\tau$	0.0612	$0.061 \pm 0.022$	$\langle d^2 \rangle^{1/2}$	2.870	$2.87^{+0.26}_{-0.24}$	$k_D$	0.14257	$0.1426 \pm 0.0014$
$A_L$	1.563	$1.59^{+0.28}_{-0.33}$	$z_{\text{re}}$	7.64	$7.5^{+2.2}_{-1.8}$	$100\theta_D$	0.15787	$0.1579^{+0.0012}_{-0.0014}$
$\ln(10^{10} A_s)$	3.0690	$3.069 \pm 0.045$	$10^9 A_s$	2.152	$2.154 \pm 0.097$	$z_{\text{eq}}$	3216	$3212^{+79}_{-89}$
$n_s$	0.9963	$0.999 \pm 0.015$	$10^9 A_s e^{-2\tau}$	1.9040	$1.904 \pm 0.027$	$k_{\text{eq}}$	0.009817	$0.00980^{+0.00024}_{-0.00027}$
$y_{\text{cal}}$	0.99996	$1.0000 \pm 0.0025$	$D_{40}$	1217.7	$1214 \pm 29$	$100\theta_{\text{eq}}$	0.8551	$0.857 \pm 0.020$
$A_{100}^{\text{dustEE}}$	0.0823	$0.0828 \pm 0.0059$	$D_{220}$	6106	$6112 \pm 220$	$100\theta_{s,\text{eq}}$	0.4690	$0.4698 \pm 0.0094$
$A_{100 \times 143}^{\text{dustEE}}$	0.0493	$0.0500 \pm 0.0054$	$D_{810}$	2598.5	$2600 \pm 40$	$r_{\text{drag}}/D_V(0.57)$	0.07488	$0.0751 \pm 0.0019$
$A_{100 \times 217}^{\text{dustEE}}$	0.0975	$0.099 \pm 0.032$	$D_{1420}$	848.7	$850 \pm 19$	$H(0.57)$	96.02	$96.3^{+1.7}_{-2.0}$
$A_{143}^{\text{dustEE}}$	0.1007	$0.1012 \pm 0.0072$	$D_{2000}$	248.8	$249.6 \pm 8.0$	$D_A(0.57)$	1313.8	$1310 \pm 39$
$A_{143 \times 217}^{\text{dustEE}}$	0.2222	$0.221 \pm 0.047$	$n_{s,0.002}$	0.9963	$0.999 \pm 0.015$	$F_{\text{AP}}(0.57)$	0.6606	$0.6602^{+0.0069}_{-0.0081}$
$A_{217}^{\text{dustEE}}$	0.636	$0.64 \pm 0.13$	$Y_P$	0.24646	$0.24649 \pm 0.00054$	$f\sigma_8(0.57)$	0.4365	$0.435 \pm 0.022$
$H_0$	73.05	$73.4 \pm 3.0$	$Y_P^{\text{BBN}}$	0.24779	$0.24782 \pm 0.00054$	$\sigma_8(0.57)$	0.5949	$0.594 \pm 0.015$
$\Omega_\Lambda$	0.7466	$0.747^{+0.030}_{-0.024}$	$10^5 D/H$	2.177	$2.17^{+0.18}_{-0.21}$	$\chi_{\text{lowTEB}}^2$	10493.00	$10494.1 \pm 1.8$
$\Omega_m$	0.2534	$0.253^{+0.024}_{-0.030}$	Age/Gyr	13.514	$13.50 \pm 0.17$	$\chi_{\text{plikEE}}^2$	747.40	$755.8 \pm 4.6$
$\Omega_m h^2$	0.13524	$0.1351^{+0.0033}_{-0.0037}$	$z_*$	1086.17	$1086.1^{+1.6}_{-1.9}$	$\chi_{\text{prior}}^2$	4.11	$8.5 \pm 3.6$
$\Omega_m h^3$	0.09879	$0.0990^{+0.0020}_{-0.0022}$	$r_*$	145.16	$145.15 \pm 0.66$	$\chi_{\text{CMB}}^2$	11240.40	$11250.0 \pm 4.8$
$\sigma_8$	0.7798	$0.778 \pm 0.026$	$100\theta_*$	1.04001	$1.04006 \pm 0.00091$			

Best-fit  $\chi_{\text{eff}}^2 = 11244.51$ ;  $\Delta\chi_{\text{eff}}^2 = -4.28$ ;  $\bar{\chi}_{\text{eff}}^2 = 11258.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.39$ ;  $R - 1 = 0.00674$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.00 ( $\Delta$  -0.62) plik\_dx11dr2\_HM\_v18\_EE: 747.40 ( $\Delta$  -3.80)

### 3.13 base\_Alens\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022240	$0.02224 \pm 0.00037$	$\sigma_8$	0.8016	$0.801 \pm 0.018$	$100\theta_*$	1.04116	$1.04112 \pm 0.00053$
$\Omega_c h^2$	0.11909	$0.1188 \pm 0.0025$	$\sigma_8 \Omega_m^{0.5}$	0.4469	$0.446 \pm 0.017$	$D_A/\text{Gpc}$	13.9043	$13.912 \pm 0.048$
$100\theta_{\text{MC}}$	1.04096	$1.04093 \pm 0.00054$	$\sigma_8 \Omega_m^{0.25}$	0.5986	$0.597 \pm 0.017$	$z_{\text{drag}}$	1059.55	$1059.55 \pm 0.76$
$\tau$	0.0523	$0.053 \pm 0.019$	$\sigma_8/h^{0.5}$	0.9751	$0.974 \pm 0.025$	$r_{\text{drag}}$	147.48	$147.56 \pm 0.51$
$A_L$	0.957	$0.98^{+0.21}_{-0.24}$	$\langle d^2 \rangle^{1/2}$	2.372	$2.38^{+0.26}_{-0.22}$	$k_D$	0.14036	$0.14027 \pm 0.00059$
$\ln(10^{10} A_s)$	3.0289	$3.030 \pm 0.042$	$z_{\text{re}}$	7.49	$7.4^{+2.4}_{-1.8}$	$100\theta_D$	0.160973	$0.16098 \pm 0.00045$
$n_s$	0.9619	$0.963 \pm 0.020$	$10^9 A_s$	2.068	$2.071 \pm 0.086$	$z_{\text{eq}}$	3377	$3370 \pm 55$
$y_{\text{cal}}$	0.99979	$0.99997 \pm 0.0026$	$10^9 A_s e^{-2\tau}$	1.8620	$1.862 \pm 0.024$	$k_{\text{eq}}$	0.010308	$0.01029 \pm 0.00017$
$A_{100}^{\text{dustTE}}$	0.1441	$0.137 \pm 0.038$	$D_{40}$	1226.6	$1228 \pm 38$	$100\theta_{\text{eq}}$	0.8174	$0.819 \pm 0.011$
$A_{100 \times 143}^{\text{dustTE}}$	0.1340	$0.134 \pm 0.029$	$D_{220}$	5697	$5703 \pm 60$	$100\theta_{s,\text{eq}}$	0.4516	$0.4524 \pm 0.0055$
$A_{100 \times 217}^{\text{dustTE}}$	0.307	$0.304 \pm 0.085$	$D_{810}$	2513.2	$2514 \pm 38$	$r_{\text{drag}}/D_V(0.57)$	0.07162	$0.07172 \pm 0.00088$
$A_{143}^{\text{dustTE}}$	0.158	$0.155 \pm 0.054$	$D_{1420}$	807.0	$807 \pm 19$	$H(0.57)$	92.97	$93.01 \pm 0.57$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.335 \pm 0.081$	$D_{2000}$	226.9	$227.2 \pm 8.6$	$D_A(0.57)$	1388.1	$1387 \pm 17$
$A_{217}^{\text{dustTE}}$	1.637	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9619	$0.963 \pm 0.020$	$F_{\text{AP}}(0.57)$	0.67587	$0.6755 \pm 0.0041$
$c_{100}$	0.99923	$0.99927 \pm 0.00099$	$Y_{\text{P}}$	0.245336	$0.24533 \pm 0.00017$	$f\sigma_8(0.57)$	0.4659	$0.465 \pm 0.012$
$H_0$	67.58	$67.7 \pm 1.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246662	$0.24666 \pm 0.00017$	$\sigma_8(0.57)$	0.5965	$0.596 \pm 0.014$
$\Omega_\Lambda$	0.6891	$0.690^{+0.017}_{-0.015}$	$10^5 \text{D}/\text{H}$	2.616	$2.616 \pm 0.071$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 \pm 1.2$
$\Omega_m$	0.3109	$0.310^{+0.015}_{-0.017}$	$\text{Age}/\text{Gyr}$	13.806	$13.804 \pm 0.054$	$\chi_{\text{plikTE}}^2$	931.45	$939.3 \pm 4.3$
$\Omega_m h^2$	0.14197	$0.1417 \pm 0.0023$	$z_*$	1090.01	$1089.98 \pm 0.64$	$\chi_{\text{prior}}^2$	1.64	$7.8 \pm 3.6$
$\Omega_m h^3$	0.09595	$0.09588 \pm 0.00061$	$r_*$	144.77	$144.84 \pm 0.52$	$\chi_{\text{CMB}}^2$	6362.22	$6371.1 \pm 4.5$

Best-fit  $\chi_{\text{eff}}^2 = 6363.86$ ;  $\Delta\chi_{\text{eff}}^2 = -0.04$ ;  $\bar{\chi}_{\text{eff}}^2 = 6378.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.07$ ;  $R - 1 = 0.00925$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.77 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_TE: 931.45 ( $\Delta$  0.21)

### 3.14 base\_Alens\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02485	$0.0248 \pm 0.0014$	$\sigma_8 \Omega_m^{0.5}$	0.4008	$0.401^{+0.033}_{-0.037}$	$D_A/\text{Gpc}$	13.921	$13.924 \pm 0.067$
$\Omega_c h^2$	0.1115	$0.1114 \pm 0.0051$	$\sigma_8 \Omega_m^{0.25}$	0.5597	$0.559 \pm 0.032$	$z_{\text{drag}}$	1064.85	$1064.8 \pm 2.7$
$100\theta_{\text{MC}}$	1.03984	$1.03994 \pm 0.00097$	$\sigma_8/h^{0.5}$	0.9200	$0.919 \pm 0.047$	$r_{\text{drag}}$	146.66	$146.71 \pm 0.80$
$\tau$	0.0564	$0.055 \pm 0.021$	$\langle d^2 \rangle^{1/2}$	2.872	$2.86^{+0.26}_{-0.23}$	$k_D$	0.14294	$0.1428 \pm 0.0014$
$A_L$	1.514	$1.54^{+0.28}_{-0.33}$	$z_{\text{re}}$	7.24	$7.0^{+2.3}_{-1.7}$	$100\theta_D$	0.15787	$0.1580^{+0.0012}_{-0.0015}$
$\ln(10^{10} A_s)$	3.0640	$3.061 \pm 0.044$	$10^9 A_s$	2.141	$2.136 \pm 0.094$	$z_{\text{eq}}$	3257	$3256 \pm 95$
$n_s$	0.9833	$0.987 \pm 0.019$	$10^9 A_s e^{-2\tau}$	1.9131	$1.911 \pm 0.027$	$k_{\text{eq}}$	0.009942	$0.00994 \pm 0.00029$
$y_{\text{cal}}$	1.00013	$0.9999 \pm 0.0025$	$D_{40}$	1249.1	$1239 \pm 37$	$100\theta_{\text{eq}}$	0.8465	$0.847 \pm 0.022$
$A_{100}^{\text{dustEE}}$	0.0804	$0.0811 \pm 0.0061$	$D_{220}$	6154	$6128 \pm 210$	$100\theta_{s,\text{eq}}$	0.4647	$0.465 \pm 0.011$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0482 \pm 0.0056$	$D_{810}$	2597.1	$2596 \pm 40$	$r_{\text{drag}}/D_V(0.57)$	0.07418	$0.0743 \pm 0.0020$
$A_{100 \times 217}^{\text{dustEE}}$	0.0988	$0.098 \pm 0.032$	$D_{1420}$	843.6	$844 \pm 19$	$H(0.57)$	95.62	$95.7^{+1.7}_{-2.1}$
$A_{143}^{\text{dustEE}}$	0.0999	$0.0992 \pm 0.0074$	$D_{2000}$	246.3	$246.7 \pm 8.4$	$D_A(0.57)$	1324.5	$1324 \pm 42$
$A_{143 \times 217}^{\text{dustEE}}$	0.2236	$0.221 \pm 0.047$	$n_{s,0.002}$	0.9833	$0.987 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.6632	$0.6634^{+0.0078}_{-0.0091}$
$A_{217}^{\text{dustEE}}$	0.615	$0.64 \pm 0.13$	$Y_P$	0.24642	$0.24639 \pm 0.00054$	$f\sigma_8(0.57)$	0.4407	$0.440 \pm 0.023$
$H_0$	72.18	$72.3 \pm 3.2$	$Y_P^{\text{BBN}}$	0.24775	$0.24772 \pm 0.00055$	$\sigma_8(0.57)$	0.5936	$0.593 \pm 0.015$
$\Omega_\Lambda$	0.7371	$0.736^{+0.034}_{-0.027}$	$10^5 D/H$	2.190	$2.21^{+0.18}_{-0.23}$	$\chi_{\text{lowEB}}^2$	5430.70	$5431.7 \pm 1.2$
$\Omega_m$	0.2629	$0.264^{+0.027}_{-0.034}$	Age/Gyr	13.541	$13.54 \pm 0.18$	$\chi_{\text{plikEE}}^2$	747.38	$756.0 \pm 4.7$
$\Omega_m h^2$	0.13696	$0.1369 \pm 0.0040$	$z_*$	1086.42	$1086.5^{+1.7}_{-2.0}$	$\chi_{\text{prior}}^2$	3.52	$8.0 \pm 3.6$
$\Omega_m h^3$	0.09886	$0.0988^{+0.0019}_{-0.0022}$	$r_*$	144.75	$144.79 \pm 0.72$	$\chi_{\text{CMB}}^2$	6178.08	$6187.6 \pm 4.8$
$\sigma_8$	0.7816	$0.780 \pm 0.026$	$100\theta_*$	1.03978	$1.03988 \pm 0.00093$			

Best-fit  $\chi_{\text{eff}}^2 = 6181.60$ ;  $\Delta\chi_{\text{eff}}^2 = -3.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 6195.67$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.30$ ;  $R - 1 = 0.00929$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.70 ( $\Delta$  -0.03) plik\_dx11dr2\_HM.v18\_EE: 747.38 ( $\Delta$  -3.37)

### 3.15 base\_Alens\_plikHM\_TT\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022614	$0.02250 \pm 0.00030$	$\Omega_m$	0.2994	$0.304^{+0.016}_{-0.018}$	$D_A/\text{Gpc}$	13.914	$13.907 \pm 0.051$
$\Omega_c h^2$	0.11746	$0.1181 \pm 0.0027$	$\Omega_m h^2$	0.14072	$0.1413 \pm 0.0025$	$z_{\text{drag}}$	1060.31	$1060.11 \pm 0.57$
$100\theta_{\text{MC}}$	1.04124	$1.04115 \pm 0.00054$	$\Omega_m h^3$	0.096483	$0.09635 \pm 0.00050$	$r_{\text{drag}}$	147.49	$147.44 \pm 0.53$
$\tau$	0.0578	$0.054 \pm 0.020$	$\sigma_8$	0.8047	$0.804 \pm 0.018$	$k_D$	0.14063	$0.14059 \pm 0.00053$
$A_L$	1.224	$1.198^{+0.099}_{-0.11}$	$\sigma_8 \Omega_m^{0.5}$	0.4403	$0.443 \pm 0.019$	$100\theta_D$	0.160557	$0.16068 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0457	$3.039 \pm 0.039$	$\sigma_8 \Omega_m^{0.25}$	0.5953	$0.597 \pm 0.019$	$z_{\text{eq}}$	3347	$3361 \pm 60$
$n_s$	0.9727	$0.9691 \pm 0.0079$	$\sigma_8/h^{0.5}$	0.9719	$0.973 \pm 0.027$	$k_{\text{eq}}$	0.010217	$0.01026 \pm 0.00018$
$y_{\text{cal}}$	1.00001	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.660	$2.635 \pm 0.076$	$100\theta_{\text{eq}}$	0.8242	$0.822 \pm 0.012$
$A_{217}^{\text{CIB}}$	58.9	$62.2 \pm 6.7$	$z_{\text{re}}$	7.94	$7.5^{+2.3}_{-1.8}$	$100\theta_{\text{s,eq}}$	0.4549	$0.4536 \pm 0.0060$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.83	—	$10^9 A_s$	2.103	$2.091 \pm 0.082$	$r_{\text{drag}}/D_V(0.57)$	0.07225	$0.07202 \pm 0.00096$
$A_{143}^{\text{tSZ}}$	6.67	$5.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8729	$1.875 \pm 0.016$	$H(0.57)$	93.50	$93.34 \pm 0.58$
$A_{100}^{\text{PS}}$	239.6	$252 \pm 30$	$D_{40}$	1215.8	$1223 \pm 20$	$D_A(0.57)$	1374.3	$1379 \pm 17$
$A_{143}^{\text{PS}}$	45.9	$40 \pm 8$	$D_{220}$	5742.2	$5742 \pm 42$	$F_{\text{AP}}(0.57)$	0.67292	$0.6741 \pm 0.0043$
$A_{143 \times 217}^{\text{PS}}$	52.9	$38 \pm 10$	$D_{810}$	2530.4	$2529 \pm 14$	$f\sigma_8(0.57)$	0.4647	$0.465 \pm 0.013$
$A_{217}^{\text{PS}}$	107.1	$98 \pm 10$	$D_{1420}$	815.3	$813.4 \pm 5.1$	$\sigma_8(0.57)$	0.6016	$0.600 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 3.85$	$D_{2000}$	232.78	$231.6 \pm 2.1$	$f_{2000}^{143}$	25.77	$28 \pm 3$
$A_{100}^{\text{dustTT}}$	7.34	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9727	$0.9691 \pm 0.0079$	$f_{2000}^{143 \times 217}$	29.49	$30.5 \pm 2.5$
$A_{143}^{\text{dustTT}}$	9.00	$8.9 \pm 1.9$	$Y_{\text{P}}$	0.245500	$0.24545 \pm 0.00013$	$f_{2000}^{217}$	102.98	$104.3 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.99	$16.7 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246827	$0.24678 \pm 0.00014$	$\chi_{\text{lowEB}}^2$	5430.77	$5431.7 \pm 1.2$
$A_{217}^{\text{dustTT}}$	82.6	$81.5 \pm 7.4$	$10^5 \text{D}/\text{H}$	2.546	$2.567 \pm 0.056$	$\chi_{\text{plik}}^2$	760.6	$775.1 \pm 5.5$
$c_{100}$	0.99802	$0.99794 \pm 0.00078$	Age/Gyr	13.752	$13.768 \pm 0.052$	$\chi_{\text{prior}}^2$	1.32	$7.2 \pm 3.5$
$c_{217}$	0.99538	$0.9957 \pm 0.0015$	$z_*$	1089.40	$1089.59 \pm 0.57$	$\chi_{\text{CMB}}^2$	6191.4	$6206.9 \pm 5.7$
$H_0$	68.56	$68.2 \pm 1.3$	$r_*$	144.90	$144.82 \pm 0.56$			
$\Omega_\Lambda$	0.7006	$0.696^{+0.018}_{-0.016}$	$100\theta_*$	1.04140	$1.04133 \pm 0.00053$			

Best-fit  $\chi_{\text{eff}}^2 = 6192.67$ ;  $\Delta\chi_{\text{eff}}^2 = -4.55$ ;  $\bar{\chi}_{\text{eff}}^2 = 6214.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.14$ ;  $R - 1 = 0.00725$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.77 ( $\Delta$  -0.78) plik\_dx11dr2\_HM\_v18\_TT: 760.58 ( $\Delta$  -3.09)

### 3.16 base\_Alens\_plikHM\_TTTEEE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022396	$0.02236 \pm 0.00017$	$A_{100 \times 217}^{\text{dustTE}}$	0.301	$0.302 \pm 0.084$	Age/Gyr	13.7917	$13.796 \pm 0.029$
$\Omega_c h^2$	0.11893	$0.1192 \pm 0.0016$	$A_{143}^{\text{dustTE}}$	0.154	$0.154 \pm 0.054$	$z_*$	1089.792	$1089.86 \pm 0.33$
$100\theta_{\text{MC}}$	1.040873	$1.04086 \pm 0.00033$	$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.335 \pm 0.081$	$r_*$	144.688	$144.65 \pm 0.34$
$\tau$	0.0551	$0.054 \pm 0.019$	$A_{217}^{\text{dustTE}}$	1.647	$1.65 \pm 0.25$	$100\theta_*$	1.041058	$1.04105 \pm 0.00033$
$A_L$	1.153	$1.143^{+0.071}_{-0.082}$	$c_{100}$	0.99829	$0.99820 \pm 0.00077$	$D_A/\text{Gpc}$	13.8982	$13.895 \pm 0.032$
$\ln(10^{10} A_s)$	3.0435	$3.041 \pm 0.039$	$c_{217}$	0.99565	$0.9958 \pm 0.0014$	$z_{\text{drag}}$	1059.933	$1059.86 \pm 0.34$
$n_s$	0.9668	$0.9651 \pm 0.0052$	$H_0$	67.74	$67.62 \pm 0.74$	$r_{\text{drag}}$	147.345	$147.32 \pm 0.33$
$y_{\text{cal}}$	0.99985	$0.99997 \pm 0.0025$	$\Omega_\Lambda$	0.6906	$0.689 \pm 0.010$	$k_D$	0.140618	$0.14061 \pm 0.00033$
$A_{217}^{\text{CIB}}$	62.0	$63.0 \pm 6.6$	$\Omega_m$	0.3094	$0.311 \pm 0.010$	$100\theta_D$	0.160750	$0.16079 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.56	—	$\Omega_m h^2$	0.14197	$0.1422 \pm 0.0015$	$z_{\text{eq}}$	3377.2	$3382 \pm 36$
$A_{143}^{\text{tSZ}}$	6.84	$5.5 \pm 1.9$	$\Omega_m h^3$	0.096167	$0.09614 \pm 0.00030$	$k_{\text{eq}}$	0.010308	$0.01032 \pm 0.00011$
$A_{100}^{\text{PS}}$	249.2	$257 \pm 28$	$\sigma_8$	0.8077	$0.807 \pm 0.017$	$100\theta_{\text{eq}}$	0.8178	$0.8169 \pm 0.0069$
$A_{143}^{\text{PS}}$	45.1	$42 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4493	$0.450 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45172	$0.4513 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	47.8	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6024	$0.603 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.07160 \pm 0.00055$
$A_{217}^{\text{PS}}$	104.7	$98 \pm 10$	$\sigma_8/h^{0.5}$	0.9814	$0.982 \pm 0.022$	$H(0.57)$	93.085	$93.04 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 3.78$	$\langle d^2 \rangle^{1/2}$	2.609	$2.598 \pm 0.057$	$D_A(0.57)$	1385.7	$1387.3 \pm 9.9$
$A_{100}^{\text{dustTT}}$	7.32	$7.4 \pm 1.9$	$z_{\text{re}}$	7.73	$7.5^{+2.4}_{-1.8}$	$F_{\text{AP}}(0.57)$	0.67550	$0.6759 \pm 0.0025$
$A_{143}^{\text{dustTT}}$	8.83	$8.9 \pm 1.8$	$10^9 A_s$	2.098	$2.094 \pm 0.082$	$f\sigma_8(0.57)$	0.4691	$0.469 \pm 0.011$
$A_{143 \times 217}^{\text{dustTT}}$	17.74	$16.7 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8791	$1.879 \pm 0.012$	$\sigma_8(0.57)$	0.6013	$0.601 \pm 0.012$
$A_{217}^{\text{dustTT}}$	82.1	$81.2 \pm 7.4$	$D_{40}$	1227.7	$1232 \pm 15$	$f_{2000}^{143}$	27.58	$28.6 \pm 2.8$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0812 \pm 0.0056$	$D_{220}$	5738.9	$5741 \pm 39$	$f_{2000}^{143 \times 217}$	30.93	$31.4 \pm 2.1$
$A_{100 \times 143}^{\text{dustEE}}$	0.04901	$0.0487 \pm 0.0050$	$D_{810}$	2532.0	$2531 \pm 14$	$f_{2000}^{217}$	104.44	$105.1 \pm 2.0$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.099 \pm 0.032$	$D_{1420}$	813.74	$812.8 \pm 4.8$	$\chi_{\text{lowEB}}^2$	5430.76	$5431.7 \pm 1.2$
$A_{143}^{\text{dustEE}}$	0.1004	$0.1001 \pm 0.0069$	$D_{2000}$	231.24	$230.7 \pm 1.7$	$\chi_{\text{plik}}^2$	2429.4	$2448.8 \pm 6.6$
$A_{143 \times 217}^{\text{dustEE}}$	0.2220	$0.223 \pm 0.047$	$n_{\text{s},0.002}$	0.9668	$0.9651 \pm 0.0052$	$\chi_{\text{prior}}^2$	6.4	$19.2 \pm 5.5$
$A_{217}^{\text{dustEE}}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245404	$0.245388 \pm 0.000078$	$\chi_{\text{CMB}}^2$	7860.1	$7880.5 \pm 6.8$
$A_{100}^{\text{dustTE}}$	0.1413	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246731	$0.246715 \pm 0.000079$			
$A_{100 \times 143}^{\text{dustTE}}$	0.1320	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.5864	$2.593 \pm 0.033$			

Best-fit  $\chi_{\text{eff}}^2 = 7866.54$ ;  $\Delta\chi_{\text{eff}}^2 = -4.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 7899.69$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.22$ ;  $R - 1 = 0.00830$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.76 ( $\Delta$  -1.15) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.35 ( $\Delta$  -2.93)

### 3.17 base\_Alens\_plikHM\_TT\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022581	$0.02252 \pm 0.00030$	$\Omega_\Lambda$	0.6990	$0.697^{+0.018}_{-0.016}$	$r_*$	144.86	$144.84 \pm 0.55$
$\Omega_c h^2$	0.11773	$0.1180 \pm 0.0026$	$\Omega_m$	0.3010	$0.303^{+0.016}_{-0.018}$	$100\theta_*$	1.04139	$1.04135 \pm 0.00052$
$100\theta_{MC}$	1.04123	$1.04118 \pm 0.00054$	$\Omega_m h^2$	0.14096	$0.1412 \pm 0.0024$	$D_A/\text{Gpc}$	13.910	$13.909 \pm 0.050$
$\tau$	0.0722	$0.071 \pm 0.020$	$\Omega_m h^3$	0.096465	$0.09636 \pm 0.00050$	$z_{\text{drag}}$	1060.28	$1060.13 \pm 0.56$
$A_L$	1.175	$1.162^{+0.099}_{-0.11}$	$\sigma_8$	0.8174	$0.817 \pm 0.019$	$r_{\text{drag}}$	147.46	$147.46 \pm 0.53$
$\ln(10^{10} A_s)$	3.0750	$3.073 \pm 0.040$	$\sigma_8 \Omega_m^{0.5}$	0.4484	$0.450 \pm 0.019$	$k_D$	0.14064	$0.14058 \pm 0.00053$
$n_s$	0.9717	$0.9697 \pm 0.0077$	$\sigma_8 \Omega_m^{0.25}$	0.6054	$0.606 \pm 0.019$	$100\theta_D$	0.160591	$0.16067 \pm 0.00031$
$A_{217}^{\text{CIB}}$	60.8	$62.0 \pm 6.7$	$\sigma_8/h^{0.5}$	0.9880	$0.989 \pm 0.028$	$z_{\text{eq}}$	3353	$3358 \pm 59$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.57	—	$\langle d^2 \rangle^{1/2}$	2.650	$2.635 \pm 0.077$	$k_{\text{eq}}$	0.010234	$0.01025 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	6.93	$5.5^{+2.1}_{-1.9}$	$z_{\text{re}}$	9.32	$9.1^{+2.1}_{-1.7}$	$100\theta_{\text{eq}}$	0.8230	$0.822 \pm 0.012$
$A_{100}^{\text{PS}}$	241.1	$251 \pm 30$	$10^9 A_s$	2.165	$2.161 \pm 0.086$	$100\theta_{s,\text{eq}}$	0.4543	$0.4539 \pm 0.0059$
$A_{143}^{\text{PS}}$	42.1	$40 \pm 8$	$10^9 A_s e^{-2\tau}$	1.8737	$1.874 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07215	$0.07207 \pm 0.00094$
$A_{143 \times 217}^{\text{PS}}$	45.7	$38 \pm 10$	$D_{40}$	1222.9	$1228 \pm 20$	$H(0.57)$	93.44	$93.37^{+0.55}_{-0.61}$
$A_{217}^{\text{PS}}$	103.9	$98 \pm 11$	$D_{220}$	5741.1	$5741 \pm 42$	$D_A(0.57)$	1376.0	$1378 \pm 17$
$A^{\text{kSZ}}$	0.02	$< 3.69$	$D_{810}$	2530.3	$2528 \pm 14$	$F_{\text{AP}}(0.57)$	0.67334	$0.6739 \pm 0.0042$
$A_{100}^{\text{dustTT}}$	7.19	$7.4 \pm 1.9$	$D_{1420}$	815.0	$813.5 \pm 5.0$	$f\sigma_8(0.57)$	0.4725	$0.473 \pm 0.014$
$A_{143}^{\text{dustTT}}$	8.93	$8.9 \pm 1.8$	$D_{2000}$	232.52	$231.7 \pm 2.1$	$\sigma_8(0.57)$	0.6106	$0.610 \pm 0.013$
$A_{143 \times 217}^{\text{dustTT}}$	18.05	$16.8 \pm 4.2$	$n_{s,0.002}$	0.9717	$0.9697 \pm 0.0077$	$f_{2000}^{143}$	26.20	$28 \pm 3$
$A_{217}^{\text{dustTT}}$	82.8	$81.5 \pm 7.4$	$Y_P$	0.245486	$0.24546 \pm 0.00013$	$f_{2000}^{143 \times 217}$	29.66	$30.4 \pm 2.5$
$c_{100}$	0.99802	$0.99793 \pm 0.00077$	$Y_P^{\text{BBN}}$	0.246812	$0.24678 \pm 0.00013$	$f_{2000}^{217}$	103.41	$104.2 \pm 2.3$
$c_{217}$	0.99553	$0.9956 \pm 0.0015$	$10^5 D/H$	2.552	$2.565 \pm 0.055$	$\chi_{\text{plik}}^2$	760.3	$774.8 \pm 5.5$
$y_{\text{cal}}$	1.00005	$1.0000 \pm 0.0025$	Age/Gyr	13.757	$13.766 \pm 0.051$	$\chi_{\text{prior}}^2$	1.47	$8.1 \pm 3.7$
$H_0$	68.44	$68.3 \pm 1.3$	$z_*$	1089.46	$1089.57 \pm 0.55$			

Best-fit  $\chi_{\text{eff}}^2 = 761.79$ ;  $\Delta\chi_{\text{eff}}^2 = -3.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 782.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.06$ ;  $R - 1 = 0.00510$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 760.32 ( $\Delta$  -2.04)



### 3.18 base\_Alens\_plikHM\_TTTEE\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022394	$0.02235 \pm 0.00018$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.084$	$Y_P^{\text{BBN}}$	0.246730	$0.246711 \pm 0.000081$
$\Omega_c h^2$	0.11889	$0.1192 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.053$	$10^5 D/H$	2.5868	$2.595 \pm 0.034$
$100\theta_{\text{MC}}$	1.040886	$1.04086 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.334	$0.334 \pm 0.080$	Age/Gyr	13.7915	$13.797 \pm 0.030$
$\tau$	0.0708	$0.070 \pm 0.020$	$A_{217}^{\text{dust}TE}$	1.654	$1.66 \pm 0.26$	$z_*$	1089.792	$1089.87 \pm 0.34$
$A_L$	1.117	$1.107 \pm 0.075$	$c_{100}$	0.99828	$0.99821 \pm 0.00077$	$r_*$	144.701	$144.66 \pm 0.35$
$\ln(10^{10} A_s)$	3.0749	$3.074 \pm 0.040$	$c_{217}$	0.99568	$0.9958 \pm 0.0014$	$100\theta_*$	1.041065	$1.04105 \pm 0.00033$
$n_s$	0.9672	$0.9652 \pm 0.0053$	$y_{\text{cal}}$	0.99987	$1.0001 \pm 0.0025$	$D_A/\text{Gpc}$	13.8993	$13.895 \pm 0.032$
$A_{217}^{\text{CIB}}$	62.0	$62.9 \pm 6.6$	$H_0$	67.75	$67.61 \pm 0.75$	$z_{\text{drag}}$	1059.895	$1059.84 \pm 0.35$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.58	—	$\Omega_\Lambda$	0.6908	$0.689 \pm 0.010$	$r_{\text{drag}}$	147.361	$147.33 \pm 0.33$
$A_{143}^{\text{tSZ}}$	6.83	$5.5 \pm 1.9$	$\Omega_m$	0.3092	$0.311 \pm 0.010$	$k_D$	0.140602	$0.14060 \pm 0.00034$
$A_{100}^{\text{PS}}$	249.1	$257 \pm 28$	$\Omega_m h^2$	0.14193	$0.1422 \pm 0.0015$	$100\theta_D$	0.160755	$0.16080 \pm 0.00020$
$A_{143}^{\text{PS}}$	45.3	$42 \pm 8$	$\Omega_m h^3$	0.096158	$0.09612 \pm 0.00031$	$z_{\text{eq}}$	3376.2	$3382 \pm 36$
$A_{143 \times 217}^{\text{PS}}$	48.2	$40 \pm 10$	$\sigma_8$	0.8204	$0.821 \pm 0.017$	$k_{\text{eq}}$	0.010305	$0.01032 \pm 0.00011$
$A_{217}^{\text{PS}}$	104.4	$98 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4562	$0.458 \pm 0.014$	$100\theta_{\text{eq}}$	0.8180	$0.8168 \pm 0.0070$
$A^{\text{kSZ}}$	0.00	$< 3.75$	$\sigma_8 \Omega_m^{0.25}$	0.6118	$0.613 \pm 0.015$	$100\theta_{\text{s,eq}}$	0.45182	$0.4512 \pm 0.0036$
$A_{100}^{\text{dust}TT}$	7.27	$7.4 \pm 1.9$	$\sigma_8/h^{0.5}$	0.9968	$0.998 \pm 0.024$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.07159 \pm 0.00056$
$A_{143}^{\text{dust}TT}$	8.85	$8.9 \pm 1.8$	$\langle d^2 \rangle^{1/2}$	2.607	$2.600 \pm 0.058$	$H(0.57)$	93.089	$93.03 \pm 0.33$
$A_{143 \times 217}^{\text{dust}TT}$	17.80	$16.7 \pm 4.1$	$z_{\text{re}}$	9.27	$9.1^{+2.1}_{-1.7}$	$D_A(0.57)$	1385.5	$1387 \pm 10$
$A_{217}^{\text{dust}TT}$	82.2	$81.3 \pm 7.4$	$10^9 A_s$	2.165	$2.165 \pm 0.086$	$F_{\text{AP}}(0.57)$	0.67545	$0.6759 \pm 0.0026$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0812 \pm 0.0057$	$10^9 A_s e^{-2\tau}$	1.8787	$1.880 \pm 0.012$	$f\sigma_8(0.57)$	0.4764	$0.477 \pm 0.011$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0487 \pm 0.0050$	$D_{40}$	1232.0	$1238 \pm 16$	$\sigma_8(0.57)$	0.6109	$0.611 \pm 0.012$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.099 \pm 0.032$	$D_{220}$	5736.7	$5741 \pm 39$	$f_{2000}^{143}$	27.53	$28.6 \pm 2.8$
$A_{143}^{\text{dust}EE}$	0.1002	$0.09997 \pm 0.0069$	$D_{810}$	2531.9	$2531 \pm 14$	$f_{2000}^{143 \times 217}$	30.90	$31.4 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2238	$0.223 \pm 0.047$	$D_{1420}$	813.89	$813.0 \pm 4.8$	$f_{2000}^{217}$	104.34	$105.1 \pm 2.0$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$D_{2000}$	231.32	$230.8 \pm 1.7$	$\chi_{\text{plik}}^2$	2429.2	$2448.9 \pm 6.6$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141 \pm 0.038$	$n_{s,0.002}$	0.9672	$0.9652 \pm 0.0053$	$\chi_{\text{prior}}^2$	6.5	$20 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	$Y_P$	0.245403	$0.245384 \pm 0.000080$			

Best-fit  $\chi_{\text{eff}}^2 = 2435.69$ ;  $\Delta\chi_{\text{eff}}^2 = -2.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 2468.93$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.32$ ;  $R - 1 = 0.00687$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEE: 2429.23 ( $\Delta$  -1.36)

### 3.19 base\_Alens\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022329	$0.02233 \pm 0.00026$	$\Omega_m$	0.3027	$0.302 \pm 0.015$	$D_A/\text{Gpc}$	13.9284	$13.931 \pm 0.047$
$\Omega_c h^2$	0.11777	$0.1177 \pm 0.0024$	$\Omega_m h^2$	0.14074	$0.1406 \pm 0.0022$	$z_{\text{drag}}$	1059.67	$1059.66 \pm 0.50$
$100\theta_{\text{MC}}$	1.04115	$1.04116 \pm 0.00051$	$\Omega_m h^3$	0.095969	$0.09594 \pm 0.00046$	$r_{\text{drag}}$	147.732	$147.76 \pm 0.50$
$\tau$	0.0596	$0.058 \pm 0.020$	$\sigma_8$	0.8069	$0.805 \pm 0.018$	$k_D$	0.14016	$0.14012 \pm 0.00050$
$A_L$	1.033	$1.039^{+0.057}_{-0.066}$	$\sigma_8 \Omega_m^{0.5}$	0.4439	$0.443 \pm 0.017$	$100\theta_D$	0.160921	$0.16094 \pm 0.00028$
$\ln(10^{10} A_s)$	3.0476	$3.045 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.5985	$0.597 \pm 0.017$	$z_{\text{eq}}$	3348	$3345 \pm 53$
$n_s$	0.9699	$0.9699 \pm 0.0069$	$\sigma_8/h^{0.5}$	0.9771	$0.975 \pm 0.026$	$k_{\text{eq}}$	0.010218	$0.01021 \pm 0.00016$
$y_{\text{cal}}$	0.99994	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4569	$2.457 \pm 0.030$	$100\theta_{\text{eq}}$	0.8232	$0.824 \pm 0.011$
$A_{217}^{\text{CIB}}$	67.3	$64.2 \pm 6.7$	$z_{\text{re}}$	8.18	$7.9^{+2.3}_{-1.9}$	$100\theta_{s,\text{eq}}$	0.4546	$0.4549 \pm 0.0054$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.107	$2.103 \pm 0.085$	$r_{\text{drag}}/D_V(0.57)$	0.07209	$0.07214 \pm 0.00085$
$A_{143}^{\text{tSZ}}$	7.23	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8699	$1.870 \pm 0.014$	$H(0.57)$	93.23	$93.25^{+0.48}_{-0.54}$
$A_{100}^{\text{PS}}$	253.0	$259 \pm 28$	$D_{40}$	1218.1	$1219 \pm 17$	$D_A(0.57)$	1380.1	$1380 \pm 15$
$A_{143}^{\text{PS}}$	38.4	$43 \pm 8$	$D_{220}$	5717.7	$5720 \pm 41$	$F_{\text{AP}}(0.57)$	0.67378	$0.6737 \pm 0.0038$
$A_{143 \times 217}^{\text{PS}}$	32.2	$38^{+10}_{-10}$	$D_{810}$	2530.5	$2530 \pm 14$	$f\sigma_8(0.57)$	0.4669	$0.466 \pm 0.012$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$D_{1420}$	814.8	$814.6 \pm 5.1$	$\sigma_8(0.57)$	0.6024	$0.601 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.83$	$D_{2000}$	230.37	$230.3 \pm 1.9$	$f_{2000}^{143}$	29.64	$30.0 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9699	$0.9699 \pm 0.0069$	$f_{2000}^{143 \times 217}$	32.29	$32.4 \pm 2.2$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$Y_P$	0.245375	$0.24537 \pm 0.00012$	$f_{2000}^{217}$	105.86	$106.0 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246701	$0.24670 \pm 0.00012$	$\chi_{\text{lensing}}^2$	9.58	$10.4 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.5991	$2.600 \pm 0.049$	$\chi_{\text{lowTEB}}^2$	10494.28	$10495.4 \pm 1.8$
$c_{100}$	0.99790	$0.99788 \pm 0.00078$	Age/Gyr	13.7850	$13.784 \pm 0.045$	$\chi_{\text{plik}}^2$	766.1	$779.7 \pm 5.7$
$c_{217}$	0.99597	$0.9959 \pm 0.0015$	$z_*$	1089.778	$1089.77 \pm 0.49$	$\chi_{\text{prior}}^2$	2.14	$7.4 \pm 3.6$
$H_0$	68.19	$68.2 \pm 1.1$	$r_*$	145.04	$145.07 \pm 0.52$	$\chi_{\text{CMB}}^2$	11269.9	$11285.5 \pm 5.6$
$\Omega_\Lambda$	0.6973	$0.698 \pm 0.015$	$100\theta_*$	1.041343	$1.04135 \pm 0.00050$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.38$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00683$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.58 ( $\Delta$  0.40) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.28 ( $\Delta$  -0.57) plik\_dx11dr2\_HM\_v18\_TT: 766.06 ( $\Delta$  -0.26)

### 3.20 base\_Alens\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022267	$0.02227 \pm 0.00020$	$\Omega_m h^3$	0.095910	$0.09592 \pm 0.00045$	$100\theta_D$	0.160973	$0.16098 \pm 0.00026$
$\Omega_c h^2$	0.11838	$0.1184 \pm 0.0013$	$\sigma_8$	0.8075	$0.808 \pm 0.017$	$z_{\text{eq}}$	3361.0	$3361 \pm 30$
$100\theta_{\text{MC}}$	1.041043	$1.04106 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	0.4472	$0.447 \pm 0.012$	$k_{\text{eq}}$	0.010258	$0.010257 \pm 0.000090$
$\tau$	0.0577	$0.058 \pm 0.020$	$\sigma_8 \Omega_m^{0.25}$	0.6009	$0.601 \pm 0.014$	$100\theta_{\text{eq}}$	0.8205	$0.8207 \pm 0.0056$
$A_L$	1.027	$1.028 \pm 0.051$	$\sigma_8/h^{0.5}$	0.9801	$0.980 \pm 0.022$	$100\theta_{\text{s,eq}}$	0.45325	$0.4533 \pm 0.0029$
$\ln(10^{10} A_s)$	3.0447	$3.045 \pm 0.040$	$\langle d^2 \rangle^{1/2}$	2.4554	$2.456 \pm 0.029$	$r_{\text{drag}}/D_V(0.57)$	0.071865	$0.07188 \pm 0.00045$
$n_s$	0.96847	$0.9681 \pm 0.0046$	$z_{\text{re}}$	8.02	$7.9^{+2.3}_{-1.9}$	$H(0.57)$	93.086	$93.10 \pm 0.29$
$y_{\text{cal}}$	0.99977	$1.0001 \pm 0.0025$	$10^9 A_s$	2.100	$2.103 \pm 0.085$	$D_A(0.57)$	1384.2	$1384.0 \pm 8.2$
$A_{217}^{\text{CIB}}$	67.6	$64.5 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8715	$1.873 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67479	$0.6748 \pm 0.0020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1219.9	$1223 \pm 14$	$f\sigma_8(0.57)$	0.4683	$0.468 \pm 0.010$
$A_{143}^{\text{tSZ}}$	7.19	$5.1 \pm 1.9$	$D_{220}$	5710.4	$5717 \pm 40$	$\sigma_8(0.57)$	0.6019	$0.602 \pm 0.012$
$A_{100}^{\text{PS}}$	254.6	$259 \pm 28$	$D_{810}$	2529.9	$2531 \pm 14$	$f_{2000}^{143}$	30.09	$30.4 \pm 2.8$
$A_{143}^{\text{PS}}$	39.4	$44 \pm 8$	$D_{1420}$	814.1	$814.3 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.62	$32.7 \pm 2.0$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{2000}$	230.01	$230.0 \pm 1.7$	$f_{2000}^{217}$	106.08	$106.2 \pm 2.0$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$n_{\text{s},0.002}$	0.96847	$0.9681 \pm 0.0046$	$\chi_{\text{lensing}}^2$	9.57	$10.4 \pm 2.0$
$A^{\text{kSZ}}$	0.01	$< 4.89$	$Y_{\text{P}}$	0.245347	$0.245346 \pm 0.000092$	$\chi_{\text{lowTEB}}^2$	10494.51	$10495.6 \pm 1.6$
$A_{100}^{\text{dustTT}}$	7.48	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246674	$0.246672 \pm 0.000093$	$\chi_{\text{plik}}^2$	766.0	$778.9 \pm 5.4$
$A_{143}^{\text{dustTT}}$	9.16	$9.1 \pm 1.8$	$10^5 D/H$	2.6108	$2.611 \pm 0.039$	$\chi_{6\text{DF}}^2$	0.0029	$0.046 \pm 0.065$
$A_{143 \times 217}^{\text{dustTT}}$	17.84	$17.2 \pm 4.1$	$\text{Age/Gyr}$	13.7974	$13.796 \pm 0.030$	$\chi_{\text{MGS}}^2$	1.54	$1.64 \pm 0.61$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.3$	$z_*$	1089.907	$1089.90 \pm 0.32$	$\chi_{\text{DR11CMass}}^2$	2.413	$2.90 \pm 0.71$
$c_{100}$	0.99790	$0.99787 \pm 0.00078$	$r_*$	144.931	$144.94 \pm 0.32$	$\chi_{\text{DR11LOWZ}}^2$	0.369	$0.50 \pm 0.50$
$c_{217}$	0.99602	$0.9960 \pm 0.0014$	$100\theta_*$	1.041239	$1.04126 \pm 0.00041$	$\chi_{\text{prior}}^2$	2.13	$7.4 \pm 3.6$
$H_0$	67.88	$67.90 \pm 0.60$	$D_A/\text{Gpc}$	13.9191	$13.919 \pm 0.031$	$\chi_{\text{CMB}}^2$	11270.0	$11284.9 \pm 5.5$
$\Omega_\Lambda$	0.6934	$0.6935 \pm 0.0079$	$z_{\text{drag}}$	1059.589	$1059.58 \pm 0.45$	$\chi_{\text{BAO}}^2$	4.32	$5.1 \pm 1.1$
$\Omega_m$	0.3066	$0.3065 \pm 0.0079$	$r_{\text{drag}}$	147.637	$147.64 \pm 0.34$			
$\Omega_m h^2$	0.14129	$0.1413 \pm 0.0012$	$k_D$	0.140212	$0.14021 \pm 0.00043$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.49$ ;  $\Delta\chi_{\text{eff}}^2 = -0.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.40$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.00707$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  0.01) DR11LOWZ: 0.37 ( $\Delta$  -0.11) CMB - smica\_g30\_ftl\_full\_pp: 9.57 ( $\Delta$  0.33) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.51 ( $\Delta$  -0.34) plik\_dx11dr2\_HM\_v18\_TT: 765.96 ( $\Delta$  -0.24)

### 3.21 base\_Alens\_plikHM\_TTTEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022293	$0.02229 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.303 \pm 0.084$	Age/Gyr	13.8011	$13.802 \pm 0.028$
$\Omega_c h^2$	0.11891	$0.1189 \pm 0.0015$	$A_{143}^{\text{dustTE}}$	0.154	$0.154 \pm 0.054$	$z_*$	1089.921	$1089.93 \pm 0.31$
$100\theta_{\text{MC}}$	1.040905	$1.04090 \pm 0.00033$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.337 \pm 0.080$	$r_*$	144.773	$144.78 \pm 0.33$
$\tau$	0.0576	$0.056 \pm 0.020$	$A_{217}^{\text{dustTE}}$	1.656	$1.66 \pm 0.26$	$100\theta_*$	1.041097	$1.04109 \pm 0.00032$
$A_L$	1.022	$1.025_{-0.058}^{+0.051}$	$c_{100}$	0.99816	$0.99813 \pm 0.00077$	$D_A/\text{Gpc}$	13.9058	$13.906 \pm 0.031$
$\ln(10^{10} A_s)$	3.0469	$3.044 \pm 0.041$	$c_{217}$	0.99605	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.67 \pm 0.32$
$n_s$	0.96646	$0.9660 \pm 0.0050$	$H_0$	67.67	$67.66 \pm 0.70$	$r_{\text{drag}}$	147.468	$147.47 \pm 0.32$
$y_{\text{cal}}$	0.99992	$0.9999 \pm 0.0025$	$\Omega_\Lambda$	0.6902	$0.6900 \pm 0.0094$	$k_D$	0.140412	$0.14040 \pm 0.00033$
$A_{217}^{\text{CIB}}$	67.6	$64.6 \pm 6.5$	$\Omega_m$	0.3098	$0.3100 \pm 0.0094$	$100\theta_D$	0.160897	$0.16091 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14185	$0.1419 \pm 0.0014$	$z_{\text{eq}}$	3374.2	$3374 \pm 34$
$A_{143}^{\text{tSZ}}$	7.32	$5.3 \pm 1.9$	$\Omega_m h^3$	0.095985	$0.09597 \pm 0.00030$	$k_{\text{eq}}$	0.010299	$0.01030 \pm 0.00010$
$A_{100}^{\text{PS}}$	256.6	$262 \pm 27$	$\sigma_8$	0.8093	$0.808 \pm 0.017$	$100\theta_{\text{eq}}$	0.8181	$0.8181 \pm 0.0066$
$A_{143}^{\text{PS}}$	38.8	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4505	$0.450 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45194	$0.4520 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	33.4	$39_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6038	$0.603 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07167	$0.07167 \pm 0.00052$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9839	$0.982 \pm 0.023$	$H(0.57)$	93.017	$93.02 \pm 0.30$
$A^{\text{kSZ}}$	0.00	$< 4.65$	$\langle d^2 \rangle^{1/2}$	2.4612	$2.461 \pm 0.028$	$D_A(0.57)$	1386.9	$1387.0 \pm 9.3$
$A_{100}^{\text{dustTT}}$	7.45	$7.5 \pm 1.9$	$z_{\text{re}}$	8.01	$7.7_{-1.9}^{+2.4}$	$F_{\text{AP}}(0.57)$	0.67559	$0.6756 \pm 0.0024$
$A_{143}^{\text{dustTT}}$	9.06	$9.0 \pm 1.8$	$10^9 A_s$	2.105	$2.100 \pm 0.085$	$f\sigma_8(0.57)$	0.4701	$0.469 \pm 0.011$
$A_{143 \times 217}^{\text{dustTT}}$	17.60	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8760	$1.876 \pm 0.012$	$\sigma_8(0.57)$	0.6025	$0.601 \pm 0.012$
$A_{217}^{\text{dustTT}}$	81.7	$81.7 \pm 7.4$	$D_{40}$	1226.5	$1228 \pm 15$	$f_{2000}^{143}$	29.66	$30.1 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0814 \pm 0.0056$	$D_{220}$	5724.0	$5725 \pm 39$	$f_{2000}^{143 \times 217}$	32.46	$32.6 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04910	$0.0491 \pm 0.0050$	$D_{810}$	2532.8	$2532 \pm 14$	$f_{2000}^{217}$	105.98	$106.1 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0984	$0.0999 \pm 0.032$	$D_{1420}$	814.58	$814.2 \pm 4.8$	$\chi_{\text{lensing}}^2$	10.22	$10.9 \pm 2.4$
$A_{143}^{\text{dustEE}}$	0.1008	$0.1004 \pm 0.0069$	$D_{2000}$	230.13	$230.0 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.01	$10496.1 \pm 1.6$
$A_{143 \times 217}^{\text{dustEE}}$	0.2240	$0.224 \pm 0.047$	$n_{s,0.002}$	0.96646	$0.9660 \pm 0.0050$	$\chi_{\text{plik}}^2$	2434.6	$2453.4 \pm 6.8$
$A_{217}^{\text{dustEE}}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.245359	$0.245355 \pm 0.000075$	$\chi_{\text{prior}}^2$	7.2	$19.6 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1407	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246685	$0.246681 \pm 0.000075$	$\chi_{\text{CMB}}^2$	12939.8	$12960.5 \pm 6.8$
$A_{100 \times 143}^{\text{dustTE}}$	0.1302	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.6059	$2.607 \pm 0.031$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.00$ ;  $\Delta\chi_{\text{eff}}^2 = -0.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.03$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.91$ ;  $R - 1 = 0.01280$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.22 ( $\Delta$  0.44) lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.01 ( $\Delta$  -0.28) plik\_dx11dr2\_HM\_v18\_TTTEE: 2434.59 ( $\Delta$  -0.32)

### 3.22 base\_Alens\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022295	$0.02230 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.337 \pm 0.080$	$D_A/\text{Gpc}$	13.9083	$13.909 \pm 0.024$
$\Omega_c h^2$	0.11879	$0.1188 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.658	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.666	$1059.68 \pm 0.30$
$100\theta_{\text{MC}}$	1.040918	$1.04092 \pm 0.00030$	$c_{100}$	0.99815	$0.99813 \pm 0.00078$	$r_{\text{drag}}$	147.496	$147.50 \pm 0.25$
$\tau$	0.0577	$0.056 \pm 0.020$	$c_{217}$	0.99606	$0.9960 \pm 0.0015$	$k_D$	0.140384	$0.14038 \pm 0.00029$
$A_L$	1.023	$1.027 \pm 0.051$	$H_0$	67.717	$67.73 \pm 0.50$	$100\theta_D$	0.160901	$0.16090 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0469	$3.044 \pm 0.041$	$\Omega_\Lambda$	0.6909	$0.6911 \pm 0.0067$	$z_{\text{eq}}$	3371.5	$3371 \pm 25$
$n_s$	0.96658	$0.9664 \pm 0.0041$	$\Omega_m$	0.3091	$0.3089 \pm 0.0067$	$k_{\text{eq}}$	0.010290	$0.010288 \pm 0.000075$
$y_{\text{cal}}$	0.99996	$0.99997 \pm 0.0025$	$\Omega_m h^2$	0.14173	$0.1417 \pm 0.0010$	$100\theta_{\text{eq}}$	0.81860	$0.8188 \pm 0.0047$
$A_{217}^{\text{CIB}}$	67.9	$64.5 \pm 6.5$	$\Omega_m h^3$	0.095976	$0.09598 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45221	$0.4523 \pm 0.0024$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8090	$0.808 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.071712	$0.07173 \pm 0.00037$
$A_{143}^{\text{tSZ}}$	7.36	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4498	$0.449 \pm 0.011$	$H(0.57)$	93.034	$93.04 \pm 0.23$
$A_{100}^{\text{PS}}$	256.2	$262 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6032	$0.602 \pm 0.014$	$D_A(0.57)$	1386.3	$1386.1 \pm 6.7$
$A_{143}^{\text{PS}}$	38.3	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9831	$0.981 \pm 0.022$	$F_{\text{AP}}(0.57)$	0.67542	$0.6754 \pm 0.0017$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.4612	$2.461 \pm 0.028$	$f\sigma_8(0.57)$	0.4698	$0.469 \pm 0.010$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$z_{\text{re}}$	8.02	$7.7_{-1.9}^{+2.4}$	$\sigma_8(0.57)$	0.6024	$0.601 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.60$	$10^9 A_s$	2.105	$2.100 \pm 0.086$	$f_{2000}^{143}$	29.69	$30.0 \pm 2.6$
$A_{100}^{\text{dust}TT}$	7.49	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8755	$1.875 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.51	$32.6 \pm 1.9$
$A_{143}^{\text{dust}TT}$	9.03	$9.1 \pm 1.8$	$D_{40}$	1226.3	$1227 \pm 14$	$f_{2000}^{217}$	106.02	$106.1 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.57	$17.2 \pm 4.1$	$D_{220}$	5725.0	$5726 \pm 38$	$\chi_{\text{lensing}}^2$	10.16	$10.9 \pm 2.4$
$A_{217}^{\text{dust}TT}$	81.7	$81.7 \pm 7.3$	$D_{810}$	2532.6	$2532 \pm 14$	$\chi_{\text{lowTEB}}^2$	10494.98	$10496.0 \pm 1.6$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0816 \pm 0.0056$	$D_{1420}$	814.51	$814.3 \pm 4.8$	$\chi_{\text{plik}}^2$	2434.7	$2453.1 \pm 6.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0491 \pm 0.0049$	$D_{2000}$	230.11	$230.0 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0154	$0.045 \pm 0.059$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.0996 \pm 0.032$	$n_{s,0.002}$	0.96658	$0.9664 \pm 0.0041$	$\chi_{\text{MGS}}^2$	1.34	$1.42 \pm 0.49$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1004 \pm 0.0068$	$Y_P$	0.245360	$0.245361 \pm 0.000065$	$\chi_{\text{DR11CMass}}^2$	2.424	$2.76 \pm 0.49$
$A_{143 \times 217}^{\text{dust}EE}$	0.2233	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246686	$0.246687 \pm 0.000065$	$\chi_{\text{DR11LOWZ}}^2$	0.543	$0.63 \pm 0.49$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$10^5 D/H$	2.6055	$2.605 \pm 0.027$	$\chi_{\text{prior}}^2$	7.2	$19.6 \pm 5.4$
$A_{100}^{\text{dust}TE}$	0.1398	$0.141 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.8000	$13.799 \pm 0.022$	$\chi_{\text{CMB}}^2$	12939.8	$12960.0 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.132 \pm 0.029$	$z_*$	1089.907	$1089.90 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.325	$4.86 \pm 0.73$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.304 \pm 0.083$	$r_*$	144.801	$144.81 \pm 0.25$			
$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	$100\theta_*$	1.041112	$1.04111 \pm 0.00030$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.86$ ;  $R - 1 = 0.01770$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 10.16 ( $\Delta$  0.49)

lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.98 ( $\Delta$  -0.23) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.67 ( $\Delta$  -0.63)

### 3.23 base\_Alens\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022694	$0.02264 \pm 0.00030$	$\Omega_m$	0.2928	$0.294 \pm 0.015$	$D_A/\text{Gpc}$	13.9341	$13.935 \pm 0.049$
$\Omega_c h^2$	0.11636	$0.1165 \pm 0.0025$	$\Omega_m h^2$	0.13970	$0.1398 \pm 0.0024$	$z_{\text{drag}}$	1060.43	$1060.30 \pm 0.57$
$100\theta_{\text{MC}}$	1.04138	$1.04137 \pm 0.00052$	$\Omega_m h^3$	0.096500	$0.09641 \pm 0.00050$	$r_{\text{drag}}$	147.70	$147.73 \pm 0.52$
$\tau$	0.0686	$0.069 \pm 0.011$	$\sigma_8$	0.8089	$0.810 \pm 0.013$	$k_D$	0.14047	$0.14039 \pm 0.00053$
$A_L$	1.224	$1.205 \pm 0.094$	$\sigma_8 \Omega_m^{0.5}$	0.4377	$0.439 \pm 0.017$	$100\theta_D$	0.160508	$0.16059 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0638	$3.065 \pm 0.023$	$\sigma_8 \Omega_m^{0.25}$	0.5950	$0.596 \pm 0.016$	$z_{\text{eq}}$	3323	$3325 \pm 56$
$n_s$	0.9761	$0.9745 \pm 0.0072$	$\sigma_8/h^{0.5}$	0.9733	$0.975 \pm 0.022$	$k_{\text{eq}}$	0.010142	$0.01015 \pm 0.00017$
$y_{\text{cal}}$	0.99993	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.663	$2.646 \pm 0.077$	$100\theta_{\text{eq}}$	0.8290	$0.829 \pm 0.011$
$A_{217}^{\text{CIB}}$	59.7	$61.1 \pm 6.7$	$z_{\text{re}}$	8.92	$9.0 \pm 1.1$	$100\theta_{\text{s,eq}}$	0.4573	$0.4571 \pm 0.0057$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.642	$> 0.397$	$10^9 A_s$	2.1408	$2.144 \pm 0.050$	$r_{\text{drag}}/D_V(0.57)$	0.07264	$0.07260 \pm 0.00092$
$A_{143}^{\text{tSZ}}$	6.87	$5.7 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8665	$1.867 \pm 0.015$	$H(0.57)$	93.72	$93.67^{+0.55}_{-0.61}$
$A_{100}^{\text{PS}}$	237.7	$247 \pm 30$	$D_{40}$	1210.6	$1215 \pm 17$	$D_A(0.57)$	1367.6	$1369 \pm 16$
$A_{143}^{\text{PS}}$	41.4	$38 \pm 8$	$D_{220}$	5738.3	$5739 \pm 42$	$F_{\text{AP}}(0.57)$	0.67122	$0.6716 \pm 0.0040$
$A_{143 \times 217}^{\text{PS}}$	46.4	$38 \pm 10$	$D_{810}$	2527.2	$2526 \pm 14$	$f\sigma_8(0.57)$	0.4653	$0.466 \pm 0.011$
$A_{217}^{\text{PS}}$	104.3	$98 \pm 11$	$D_{1420}$	815.3	$814.3 \pm 5.0$	$\sigma_8(0.57)$	0.6064	$0.6065 \pm 0.0076$
$A^{\text{kSZ}}$	0.00	$< 3.29$	$D_{2000}$	233.12	$232.4 \pm 2.1$	$f_{2000}^{143}$	25.25	$26 \pm 3$
$A_{100}^{\text{dustTT}}$	7.33	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9761	$0.9745 \pm 0.0072$	$f_{2000}^{143 \times 217}$	28.88	$29.5 \pm 2.4$
$A_{143}^{\text{dustTT}}$	8.91	$8.9 \pm 1.8$	$Y_{\text{P}}$	0.245535	$0.24551 \pm 0.00013$	$f_{2000}^{217}$	102.60	$103.4 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	17.74	$16.6 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246863	$0.24684 \pm 0.00013$	$\chi_{\text{WMAPTEB}}^2$	19731.87	$19733.3 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.6	$81.5 \pm 7.4$	$10^5 D/H$	2.531	$2.543 \pm 0.054$	$\chi_{\text{plik}}^2$	760.5	$775.1 \pm 5.6$
$c_{100}$	0.99797	$0.99792 \pm 0.00078$	Age/Gyr	13.7350	$13.741 \pm 0.050$	$\chi_{\text{prior}}^2$	1.55	$7.2 \pm 3.5$
$c_{217}$	0.99541	$0.9955 \pm 0.0015$	$z_*$	1089.20	$1089.29 \pm 0.54$	$\chi_{\text{CMB}}^2$	20492.4	$20508.3 \pm 5.7$
$H_0$	69.07	$69.0 \pm 1.2$	$r_*$	145.13	$145.14 \pm 0.54$			
$\Omega_\Lambda$	0.7072	$0.706 \pm 0.015$	$100\theta_*$	1.041537	$1.04153 \pm 0.00050$			

Best-fit  $\chi_{\text{eff}}^2 = 20493.97$ ;  $\Delta\chi_{\text{eff}}^2 = -6.19$ ;  $\bar{\chi}_{\text{eff}}^2 = 20515.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.63$ ;  $R - 1 = 0.01119$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19731.87 ( $\Delta$  -2.28) plik\_dx11dr2\_HM\_v18\_TT: 760.54 ( $\Delta$  -3.53)

### 3.24 base\_Alens\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02249 \pm 0.00023$	$\Omega_m h^2$	$0.1413 \pm 0.0013$	$r_{\text{drag}}$	$147.43 \pm 0.35$
$\Omega_c h^2$	$0.1182 \pm 0.0013$	$\Omega_m h^3$	$0.09635 \pm 0.00049$	$k_D$	$0.14060 \pm 0.00046$
$100\theta_{\text{MC}}$	$1.04116 \pm 0.00043$	$\sigma_8$	$0.8152^{+0.0099}_{-0.012}$	$100\theta_D$	$0.16069 \pm 0.00028$
$\tau$	$0.068 \pm 0.011$	$\sigma_8 \Omega_m^{0.5}$	$0.4497^{+0.0095}_{-0.011}$	$z_{\text{eq}}$	$3362 \pm 30$
$A_L$	$1.165 \pm 0.077$	$\sigma_8 \Omega_m^{0.25}$	$0.6055^{+0.0097}_{-0.011}$	$k_{\text{eq}}$	$0.010262 \pm 0.000091$
$\ln(10^{10} A_s)$	$3.066^{+0.022}_{-0.025}$	$\sigma_8/h^{0.5}$	$0.987^{+0.014}_{-0.016}$	$100\theta_{\text{eq}}$	$0.8211 \pm 0.0057$
$n_s$	$0.9702^{+0.0049}_{-0.0044}$	$\langle d^2 \rangle^{1/2}$	$2.634^{+0.083}_{-0.073}$	$100\theta_{s,\text{eq}}$	$0.4533 \pm 0.0029$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$z_{\text{re}}$	$8.9 \pm 1.1$	$r_{\text{drag}}/D_V(0.57)$	$0.07198 \pm 0.00045$
$A_{217}^{\text{CIB}}$	$61.7 \pm 6.7$	$10^9 A_s$	$2.146^{+0.046}_{-0.054}$	$H(0.57)$	$93.31 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	$> 0.380$	$10^9 A_s e^{-2\tau}$	$1.874 \pm 0.012$	$D_A(0.57)$	$1379.7 \pm 8.3$
$A_{143}^{\text{tSZ}}$	$5.6 \pm 1.8$	$D_{40}$	$1223 \pm 14$	$F_{\text{AP}}(0.57)$	$0.6742 \pm 0.0020$
$A_{100}^{\text{PS}}$	$249 \pm 27$	$D_{220}$	$5730 \pm 41$	$f\sigma_8(0.57)$	$0.4721^{+0.0069}_{-0.0079}$
$A_{143}^{\text{PS}}$	$40 \pm 8$	$D_{810}$	$2529 \pm 14$	$\sigma_8(0.57)$	$0.6082^{+0.0069}_{-0.0079}$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{1420}$	$813.8 \pm 5.0$	$f_{2000}^{143}$	$27.3 \pm 3.0$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$D_{2000}$	$231.8 \pm 1.9$	$f_{2000}^{143 \times 217}$	$30.2 \pm 2.2$
$A^{\text{kSZ}}$	$< 3.45$	$n_{s,0.002}$	$0.9702^{+0.0049}_{-0.0044}$	$f_{2000}^{217}$	$104.1 \pm 2.1$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.8$	$Y_{\text{P}}$	$0.24545 \pm 0.00010$	$\chi_{\text{WMAPTEB}}^2$	$19733.9 \pm 1.8$
$A_{143}^{\text{dustTT}}$	$8.9 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	$0.24677 \pm 0.00010$	$\chi_{\text{plik}}^2$	$774.2 \pm 5.8$
$A_{143 \times 217}^{\text{dustTT}}$	$16.8 \pm 4.2$	$10^5 \text{D}/\text{H}$	$2.569 \pm 0.042$	$\chi_{6\text{DF}}^2$	$0.045 \pm 0.064$
$A_{217}^{\text{dustTT}}$	$81.6 \pm 7.5$	$\text{Age}/\text{Gyr}$	$13.770 \pm 0.032$	$\chi_{\text{MGS}}^2$	$1.79 \pm 0.63$
$c_{100}$	$0.99792 \pm 0.00078$	$z_*$	$1089.61 \pm 0.34$	$\chi_{\text{DR11CMass}}^2$	$2.99 \pm 0.82$
$c_{217}$	$0.9956 \pm 0.0015$	$r_*$	$144.80 \pm 0.32$	$\chi_{\text{DR11LOWZ}}^2$	$0.40 \pm 0.44$
$H_0$	$68.17 \pm 0.61$	$100\theta_*$	$1.04133 \pm 0.00042$	$\chi_{\text{prior}}^2$	$7.1 \pm 3.5$
$\Omega_\Lambda$	$0.6957 \pm 0.0079$	$D_A/\text{Gpc}$	$13.906 \pm 0.032$	$\chi_{\text{CMB}}^2$	$20508.1 \pm 6.1$
$\Omega_m$	$0.3043 \pm 0.0079$	$z_{\text{drag}}$	$1060.09 \pm 0.50$	$\chi_{\text{BAO}}^2$	$5.2 \pm 1.2$

$$\bar{\chi}_{\text{eff}}^2 = 20520.50; \Delta\bar{\chi}_{\text{eff}}^2 = -4.40; R - 1 = 0.02623$$

## 4 Alensf

### 4.1 base\_Alensf\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022700	$0.02262 \pm 0.00029$	$\Omega_m$	0.2925	$0.296^{+0.014}_{-0.016}$	$D_A/\text{Gpc}$	13.9343	$13.929 \pm 0.048$
$\Omega_c h^2$	0.11633	$0.1168 \pm 0.0025$	$\Omega_m h^2$	0.13967	$0.1401 \pm 0.0023$	$z_{\text{drag}}$	1060.43	$1060.28 \pm 0.56$
$100\theta_{\text{MC}}$	1.04141	$1.04133 \pm 0.00052$	$\Omega_m h^3$	0.09651	$0.09641 \pm 0.00049$	$r_{\text{drag}}$	147.70	$147.66 \pm 0.51$
$\tau$	0.0617	$0.060 \pm 0.021$	$\sigma_8$	0.8035	$0.804 \pm 0.018$	$k_D$	0.14047	$0.14045 \pm 0.00051$
$A_L^{\text{fid}}$	1.182	$1.167 \pm 0.065$	$\sigma_8 \Omega_m^{0.5}$	0.4346	$0.437 \pm 0.018$	$100\theta_D$	0.160504	$0.16059 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0505	$3.048 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.5909	$0.593 \pm 0.018$	$z_{\text{eq}}$	3322	$3332 \pm 56$
$n_s$	0.9763	$0.9738 \pm 0.0072$	$\sigma_8/h^{0.5}$	0.9666	$0.969 \pm 0.026$	$k_{\text{eq}}$	0.010140	$0.01017 \pm 0.00017$
$y_{\text{cal}}$	1.00006	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.390	$2.399 \pm 0.063$	$100\theta_{\text{eq}}$	0.8292	$0.827 \pm 0.011$
$A_{217}^{\text{CIB}}$	59.2	$61.2 \pm 6.7$	$z_{\text{re}}$	8.27	$8.1^{+2.4}_{-1.8}$	$100\theta_{s,\text{eq}}$	0.4574	$0.4565 \pm 0.0056$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.731	$> 0.405$	$10^9 A_s$	2.113	$2.110 \pm 0.087$	$r_{\text{drag}}/D_V(0.57)$	0.07266	$0.07249 \pm 0.00091$
$A_{143}^{\text{tSZ}}$	6.81	$5.7 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8675	$1.868 \pm 0.015$	$H(0.57)$	93.73	$93.61 \pm 0.56$
$A_{100}^{\text{PS}}$	237.3	$246 \pm 30$	$D_{40}$	1208.3	$1214 \pm 18$	$D_A(0.57)$	1367.3	$1371 \pm 16$
$A_{143}^{\text{PS}}$	42.4	$38 \pm 8$	$D_{220}$	5741.0	$5739 \pm 42$	$F_{\text{AP}}(0.57)$	0.67115	$0.6720 \pm 0.0039$
$A_{143 \times 217}^{\text{PS}}$	48.5	$38 \pm 10$	$D_{810}$	2528.7	$2527 \pm 14$	$f\sigma_8(0.57)$	0.4622	$0.463 \pm 0.013$
$A_{217}^{\text{PS}}$	105.0	$98 \pm 11$	$D_{1420}$	815.91	$814.4 \pm 5.0$	$\sigma_8(0.57)$	0.6024	$0.602 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 3.33$	$D_{2000}$	233.43	$232.6 \pm 2.0$	$f_{2000}^{143}$	25.04	$26 \pm 3$
$A_{100}^{\text{dustTT}}$	7.35	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9763	$0.9738 \pm 0.0072$	$f_{2000}^{143 \times 217}$	28.70	$29.4 \pm 2.4$
$A_{143}^{\text{dustTT}}$	9.01	$8.9 \pm 1.8$	$Y_{\text{P}}$	0.245538	$0.24550 \pm 0.00013$	$f_{2000}^{217}$	102.40	$103.3 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	17.90	$16.6 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246865	$0.24683 \pm 0.00013$	$\chi_{\text{lowTEB}}^2$	10493.41	$10494.9 \pm 1.7$
$A_{217}^{\text{dustTT}}$	82.7	$81.5 \pm 7.3$	$10^5 D/H$	2.530	$2.546 \pm 0.053$	$\chi_{\text{plik}}^2$	760.7	$775.0 \pm 5.5$
$c_{100}$	0.99798	$0.99793 \pm 0.00078$	Age/Gyr	13.7337	$13.746 \pm 0.050$	$\chi_{\text{prior}}^2$	1.47	$7.1 \pm 3.4$
$c_{217}$	0.99538	$0.9956 \pm 0.0015$	$z_*$	1089.19	$1089.34 \pm 0.53$	$\chi_{\text{CMB}}^2$	11254.1	$11269.9 \pm 5.7$
$H_0$	69.10	$68.8 \pm 1.2$	$r_*$	145.13	$145.07 \pm 0.53$			
$\Omega_\Lambda$	0.7075	$0.704^{+0.016}_{-0.014}$	$100\theta_*$	1.04156	$1.04149 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.58$ ;  $\Delta\chi_{\text{eff}}^2 = -6.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 11277.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -4.81$ ;  $R - 1 = 0.00509$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.41 ( $\Delta$  -3.06) plik\_dx11dr2\_HM\_v18\_TT: 760.69 ( $\Delta$  -2.68)



## 4.2 base\_Alensf\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022450	$0.02240 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.301 \pm 0.084$	Age/Gyr	13.7812	$13.788 \pm 0.029$
$\Omega_c h^2$	0.11824	$0.1185 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.152	$0.154 \pm 0.053$	$z_*$	1089.667	$1089.75 \pm 0.33$
$100\theta_{\text{MC}}$	1.040939	$1.04092 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.334 \pm 0.080$	$r_*$	144.826	$144.79 \pm 0.33$
$\tau$	0.0582	$0.057 \pm 0.020$	$A_{217}^{\text{dust}TE}$	1.649	$1.65 \pm 0.25$	$100\theta_*$	1.041118	$1.04110 \pm 0.00032$
$A_L^{\text{fid}}$	1.145	$1.132 \pm 0.051$	$c_{100}$	0.99832	$0.99820 \pm 0.00077$	$D_A/\text{Gpc}$	13.9107	$13.908 \pm 0.031$
$\ln(10^{10} A_s)$	3.0482	$3.047 \pm 0.040$	$c_{217}$	0.99554	$0.9958 \pm 0.0015$	$z_{\text{drag}}$	1060.009	$1059.91 \pm 0.34$
$n_s$	0.9704	$0.9680 \pm 0.0051$	$H_0$	68.05	$67.91 \pm 0.73$	$r_{\text{drag}}$	147.468	$147.45 \pm 0.32$
$y_{\text{cal}}$	0.99994	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6948	$0.6929 \pm 0.0097$	$k_D$	0.140530	$0.14051 \pm 0.00032$
$A_{217}^{\text{CIB}}$	59.0	$62.4 \pm 6.6$	$\Omega_m$	0.3052	$0.3071 \pm 0.0097$	$100\theta_D$	0.160707	$0.16076 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.902	$> 0.390$	$\Omega_m h^2$	0.14133	$0.1416 \pm 0.0015$	$z_{\text{eq}}$	3362.0	$3367 \pm 35$
$A_{143}^{\text{tSZ}}$	6.66	$5.6_{-1.8}^{+2.0}$	$\Omega_m h^3$	0.096176	$0.09613 \pm 0.00030$	$k_{\text{eq}}$	0.010261	$0.01028 \pm 0.00011$
$A_{100}^{\text{PS}}$	243.0	$254 \pm 28$	$\sigma_8$	0.8082	$0.808 \pm 0.017$	$100\theta_{\text{eq}}$	0.8208	$0.8197 \pm 0.0068$
$A_{143}^{\text{PS}}$	48.3	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4465	$0.448 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45323	$0.4527 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	56.1	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6007	$0.601 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07191	$0.07182 \pm 0.00055$
$A_{217}^{\text{PS}}$	108.5	$98 \pm 10$	$\sigma_8/h^{0.5}$	0.9797	$0.981 \pm 0.023$	$H(0.57)$	93.215	$93.15 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 3.33$	$\langle d^2 \rangle^{1/2}$	2.421	$2.428 \pm 0.055$	$D_A(0.57)$	1381.6	$1383.5 \pm 9.7$
$A_{100}^{\text{dust}TT}$	7.30	$7.4 \pm 1.9$	$z_{\text{re}}$	8.02	$7.8_{-1.8}^{+2.4}$	$F_{\text{AP}}(0.57)$	0.67443	$0.6749 \pm 0.0025$
$A_{143}^{\text{dust}TT}$	8.78	$8.8 \pm 1.8$	$10^9 A_s$	2.108	$2.106 \pm 0.084$	$f\sigma_8(0.57)$	0.4683	$0.469 \pm 0.011$
$A_{143 \times 217}^{\text{dust}TT}$	18.10	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8764	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.6027	$0.602 \pm 0.012$
$A_{217}^{\text{dust}TT}$	82.8	$81.3 \pm 7.4$	$D_{40}$	1220.1	$1226 \pm 15$	$f_{2000}^{143}$	26.25	$27.7 \pm 2.8$
$A_{100}^{\text{dust}EE}$	0.0819	$0.0816 \pm 0.0056$	$D_{220}$	5732.5	$5736 \pm 40$	$f_{2000}^{143 \times 217}$	30.07	$30.7 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.04955	$0.0492 \pm 0.0050$	$D_{810}$	2532.4	$2531 \pm 14$	$f_{2000}^{217}$	103.49	$104.5 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.099 \pm 0.032$	$D_{1420}$	815.11	$813.6 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10494.37	$10495.8 \pm 1.6$
$A_{143}^{\text{dust}EE}$	0.1009	$0.1006 \pm 0.0068$	$D_{2000}$	232.11	$231.3 \pm 1.7$	$\chi_{\text{plik}}^2$	2429.6	$2448.8 \pm 6.7$
$A_{143 \times 217}^{\text{dust}EE}$	0.2221	$0.223 \pm 0.047$	$n_{\text{s},0.002}$	0.9704	$0.9680 \pm 0.0051$	$\chi_{\text{prior}}^2$	6.5	$19.1 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245428	$0.245407 \pm 0.000078$	$\chi_{\text{CMB}}^2$	12924.0	$12944.6 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1417	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246755	$0.246734 \pm 0.000078$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1306	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.5763	$2.585 \pm 0.033$			

Best-fit  $\chi_{\text{eff}}^2 = 12930.49$ ;  $\Delta\chi_{\text{eff}}^2 = -5.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12963.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -3.91$ ;  $R - 1 = 0.01020$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10494.37 ( $\Delta$  -2.56) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.63 ( $\Delta$  -2.02)

### 4.3 base\_Alensf\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022664	$0.02256 \pm 0.00026$	$\Omega_m$	0.2963	$0.300 \pm 0.012$	$D_A/\text{Gpc}$	13.9230	$13.920 \pm 0.041$
$\Omega_c h^2$	0.11695	$0.1174 \pm 0.0020$	$\Omega_m h^2$	0.14026	$0.1406 \pm 0.0019$	$z_{\text{drag}}$	1060.39	$1060.19 \pm 0.53$
$100\theta_{\text{MC}}$	1.041276	$1.04119 \pm 0.00047$	$\Omega_m h^3$	0.096499	$0.09635 \pm 0.00049$	$r_{\text{drag}}$	147.575	$147.57 \pm 0.44$
$\tau$	0.0719	$0.069 \pm 0.017$	$\sigma_8$	0.8144	$0.8132 \pm 0.0096$	$k_D$	0.140575	$0.14051 \pm 0.00048$
$A_L^{\text{fid}}$	1.103	$1.088 \pm 0.060$	$\sigma_8 \Omega_m^{0.5}$	0.4433	$0.4450 \pm 0.0092$	$100\theta_D$	0.160513	$0.16063 \pm 0.00029$
$\ln(10^{10} A_s)$	3.0728	$3.068 \pm 0.030$	$\sigma_8 \Omega_m^{0.25}$	0.6009	$0.6016 \pm 0.0080$	$z_{\text{eq}}$	3336.3	$3345 \pm 45$
$n_s$	0.9752	$0.9722 \pm 0.0063$	$\sigma_8/h^{0.5}$	0.9819	$0.982 \pm 0.012$	$k_{\text{eq}}$	0.010183	$0.01021 \pm 0.00014$
$y_{\text{cal}}$	1.00020	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4260	$2.431 \pm 0.027$	$100\theta_{\text{eq}}$	0.8264	$0.8246 \pm 0.0089$
$A_{217}^{\text{CIB}}$	58.1	$61.3 \pm 6.7$	$z_{\text{re}}$	9.25	$9.0_{-1.4}^{+1.7}$	$100\theta_{s,\text{eq}}$	0.45598	$0.4551 \pm 0.0045$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.904	$> 0.399$	$10^9 A_s$	2.160	$2.150 \pm 0.066$	$r_{\text{drag}}/D_V(0.57)$	0.07242	$0.07226 \pm 0.00072$
$A_{143}^{\text{tSZ}}$	6.70	$5.6_{-1.8}^{+2.1}$	$10^9 A_s e^{-2\tau}$	1.8709	$1.871 \pm 0.013$	$H(0.57)$	93.600	$93.46 \pm 0.45$
$A_{100}^{\text{PS}}$	236.3	$248 \pm 30$	$D_{40}$	1215.0	$1220 \pm 13$	$D_A(0.57)$	1371.2	$1375 \pm 13$
$A_{143}^{\text{PS}}$	45.2	$39 \pm 8$	$D_{220}$	5740.1	$5738 \pm 41$	$F_{\text{AP}}(0.57)$	0.67213	$0.6730 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	53.7	$38 \pm 10$	$D_{810}$	2531.1	$2528 \pm 14$	$f\sigma_8(0.57)$	0.4695	$0.4696 \pm 0.0056$
$A_{217}^{\text{PS}}$	107.6	$98 \pm 11$	$D_{1420}$	816.5	$814.3 \pm 5.1$	$\sigma_8(0.57)$	0.6096	$0.6079 \pm 0.0086$
$A^{\text{kSZ}}$	0.00	$< 3.39$	$D_{2000}$	233.42	$232.3 \pm 2.0$	$f_{2000}^{143}$	24.90	$27 \pm 3$
$A_{100}^{\text{dustTT}}$	7.37	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9752	$0.9722 \pm 0.0063$	$f_{2000}^{143 \times 217}$	28.81	$29.7 \pm 2.4$
$A_{143}^{\text{dustTT}}$	8.97	$8.9 \pm 1.8$	$Y_P$	0.245522	$0.24548 \pm 0.00012$	$f_{2000}^{217}$	102.46	$103.7 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	17.98	$16.7 \pm 4.1$	$Y_P^{\text{BBN}}$	0.246849	$0.24680 \pm 0.00012$	$\chi_{\text{lensing}}^2$	8.83	$9.7 \pm 1.3$
$A_{217}^{\text{dustTT}}$	82.7	$81.6 \pm 7.4$	$10^5 D/H$	2.5366	$2.556 \pm 0.048$	$\chi_{\text{lowTEB}}^2$	10494.05	$10495.1 \pm 1.3$
$c_{100}$	0.99805	$0.99792 \pm 0.00078$	Age/Gyr	13.7440	$13.758 \pm 0.042$	$\chi_{\text{plik}}^2$	760.6	$774.4 \pm 5.4$
$c_{217}$	0.99535	$0.9956 \pm 0.0015$	$z_*$	1089.289	$1089.46 \pm 0.45$	$\chi_{\text{prior}}^2$	1.28	$7.1 \pm 3.4$
$H_0$	68.80	$68.53 \pm 0.97$	$r_*$	144.998	$144.96 \pm 0.44$	$\chi_{\text{CMB}}^2$	11263.5	$11279.1 \pm 5.7$
$\Omega_\Lambda$	0.7037	$0.700 \pm 0.012$	$100\theta_*$	1.041431	$1.04136 \pm 0.00046$			

Best-fit  $\chi_{\text{eff}}^2 = 11264.76$ ;  $\Delta\chi_{\text{eff}}^2 = -7.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -6.05$ ;  $R - 1 = 0.00753$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.83 ( $\Delta$  -0.34) lowl.SMW.70\_dx11d.2014.10.03\_v5c\_Ap: 10494.05 ( $\Delta$  -0.81) plik\_dx11dr2\_HM\_v18\_TT: 760.60 ( $\Delta$  -5.72)

#### 4.4 base\_Alensf\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022432	$0.02240 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.085$	Age/Gyr	13.7837	$13.789 \pm 0.027$
$\Omega_c h^2$	0.11834	$0.1185 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.152	$0.153 \pm 0.053$	$z_*$	1089.699	$1089.76 \pm 0.31$
$100\theta_{\text{MC}}$	1.040937	$1.04090 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.335 \pm 0.080$	$r_*$	144.813	$144.79 \pm 0.31$
$\tau$	0.0616	$0.059 \pm 0.014$	$A_{217}^{\text{dust}TE}$	1.651	$1.65 \pm 0.26$	$100\theta_*$	1.041111	$1.04109 \pm 0.00032$
$A_L^{\text{fid}}$	1.0671	$1.059 \pm 0.048$	$c_{100}$	0.99825	$0.99818 \pm 0.00077$	$D_A/\text{Gpc}$	13.9095	$13.908 \pm 0.028$
$\ln(10^{10} A_s)$	3.0550	$3.051 \pm 0.026$	$c_{217}$	0.99561	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	1059.971	$1059.90 \pm 0.33$
$n_s$	0.96940	$0.9680 \pm 0.0048$	$H_0$	68.00	$67.89 \pm 0.67$	$r_{\text{drag}}$	147.461	$147.45 \pm 0.30$
$y_{\text{cal}}$	0.99993	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6941	$0.6927 \pm 0.0088$	$k_D$	0.140524	$0.14051 \pm 0.00031$
$A_{217}^{\text{CIB}}$	61.4	$62.3 \pm 6.5$	$\Omega_m$	0.3059	$0.3073 \pm 0.0088$	$100\theta_D$	0.160726	$0.16077 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.620	$> 0.402$	$\Omega_m h^2$	0.14142	$0.1416 \pm 0.0013$	$z_{\text{eq}}$	3364.0	$3368 \pm 32$
$A_{143}^{\text{tSZ}}$	6.85	$5.6_{-1.8}^{+2.0}$	$\Omega_m h^3$	0.096157	$0.09611 \pm 0.00030$	$k_{\text{eq}}$	0.010267	$0.010279 \pm 0.000098$
$A_{100}^{\text{PS}}$	245.3	$254 \pm 27$	$\sigma_8$	0.8110	$0.8097 \pm 0.0091$	$100\theta_{\text{eq}}$	0.8204	$0.8196 \pm 0.0062$
$A_{143}^{\text{PS}}$	44.3	$41 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4485	$0.4488 \pm 0.0073$	$100\theta_{\text{s,eq}}$	0.45302	$0.4527 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	48.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6031	$0.6028 \pm 0.0073$	$r_{\text{drag}}/D_V(0.57)$	0.07187	$0.07181 \pm 0.00050$
$A_{217}^{\text{PS}}$	104.6	$99 \pm 11$	$\sigma_8/h^{0.5}$	0.9835	$0.983 \pm 0.011$	$H(0.57)$	93.188	$93.14 \pm 0.30$
$A^{\text{kSZ}}$	0.00	$< 3.38$	$\langle d^2 \rangle^{1/2}$	2.4323	$2.433 \pm 0.027$	$D_A(0.57)$	1382.3	$1383.7 \pm 8.9$
$A_{100}^{\text{dust}TT}$	7.29	$7.4 \pm 1.9$	$z_{\text{re}}$	8.36	$8.1_{-1.3}^{+1.5}$	$F_{\text{AP}}(0.57)$	0.67460	$0.6749 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	8.90	$8.8 \pm 1.8$	$10^9 A_s$	2.122	$2.115 \pm 0.055$	$f\sigma_8(0.57)$	0.4701	$0.4696 \pm 0.0053$
$A_{143 \times 217}^{\text{dust}TT}$	17.67	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8761	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.6047	$0.6034 \pm 0.0075$
$A_{217}^{\text{dust}TT}$	82.0	$81.2 \pm 7.3$	$D_{40}$	1223.2	$1226 \pm 12$	$f_{2000}^{143}$	26.77	$27.7 \pm 2.8$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0816 \pm 0.0056$	$D_{220}$	5733.4	$5736 \pm 39$	$f_{2000}^{143 \times 217}$	30.35	$30.7 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.04940	$0.0492 \pm 0.0050$	$D_{810}$	2531.5	$2531 \pm 14$	$f_{2000}^{217}$	103.89	$104.5 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.0998 \pm 0.032$	$D_{1420}$	814.51	$813.8 \pm 4.9$	$\chi_{\text{lensing}}^2$	8.77	$9.6 \pm 1.2$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1006 \pm 0.0069$	$D_{2000}$	231.75	$231.3 \pm 1.7$	$\chi_{\text{lowTEB}}^2$	10494.61	$10495.4 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2222	$0.223 \pm 0.047$	$n_{s,0.002}$	0.96940	$0.9680 \pm 0.0048$	$\chi_{\text{plik}}^2$	2429.3	$2448.6 \pm 6.6$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.245420	$0.245405 \pm 0.000075$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1418	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246747	$0.246732 \pm 0.000075$	$\chi_{\text{CMB}}^2$	12932.7	$12953.5 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.5796	$2.586 \pm 0.031$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.35$ ;  $\Delta\chi_{\text{eff}}^2 = -7.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -6.34$ ;  $R - 1 = 0.01140$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.78 ( $\Delta$  -1.00) lowl\_SMW.70\_dx11d.2014.10.03\_v5c\_Ap: 10494.61 ( $\Delta$  -0.68) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2429.34 ( $\Delta$  -5.57)

## 5 Aphihi

### 5.1 base\_Aphihi\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022264	$0.02224 \pm 0.00023$	$\Omega_m$	0.3127	$0.313 \pm 0.013$	$D_A/\text{Gpc}$	13.8952	$13.896 \pm 0.045$
$\Omega_c h^2$	0.11942	$0.1195 \pm 0.0021$	$\Omega_m h^2$	0.14233	$0.1424 \pm 0.0020$	$z_{\text{drag}}$	1059.666	$1059.60 \pm 0.47$
$100\theta_{\text{MC}}$	1.040904	$1.04087 \pm 0.00047$	$\Omega_m h^3$	0.096020	$0.09598 \pm 0.00046$	$r_{\text{drag}}$	147.362	$147.37 \pm 0.49$
$\tau$	0.0796	$0.078 \pm 0.019$	$\sigma_8$	0.8298	$0.829 \pm 0.014$	$k_D$	0.14050	$0.14047 \pm 0.00053$
$\ln(10^{10} A_s)$	3.0922	$3.089 \pm 0.036$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.464 \pm 0.013$	$100\theta_D$	0.160920	$0.16095 \pm 0.00027$
$n_s$	0.9665	$0.9661 \pm 0.0062$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.620 \pm 0.013$	$z_{\text{eq}}$	3385.8	$3387 \pm 49$
$A_L^{\phi\phi}$	0.9471	$0.950 \pm 0.040$	$\sigma_8/h^{0.5}$	1.0103	$1.009 \pm 0.019$	$k_{\text{eq}}$	0.010334	$0.01034 \pm 0.00015$
$y_{\text{cal}}$	1.00024	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4961	$2.495 \pm 0.045$	$100\theta_{\text{eq}}$	0.8159	$0.8158 \pm 0.0092$
$A_{217}^{\text{CIB}}$	66.8	$63.8 \pm 6.6$	$z_{\text{re}}$	10.12	$9.9^{+1.8}_{-1.6}$	$100\theta_{s,\text{eq}}$	0.45084	$0.4508 \pm 0.0047$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.203	$2.198 \pm 0.080$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.07150 \pm 0.00073$
$A_{143}^{\text{tSZ}}$	7.18	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8786	$1.879 \pm 0.014$	$H(0.57)$	92.942	$92.92 \pm 0.41$
$A_{100}^{\text{PS}}$	252.0	$258 \pm 28$	$D_{40}$	1234.7	$1236 \pm 15$	$D_A(0.57)$	1389.5	$1390 \pm 13$
$A_{143}^{\text{PS}}$	38.9	$44 \pm 8$	$D_{220}$	5717.2	$5719 \pm 41$	$F_{\text{AP}}(0.57)$	0.67634	$0.6765 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	33.2	$39^{+10}_{-10}$	$D_{810}$	2533.6	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4828	$0.4822 \pm 0.0092$
$A_{217}^{\text{PS}}$	97.6	$97 \pm 10$	$D_{1420}$	814.8	$814.6 \pm 5.0$	$\sigma_8(0.57)$	0.6170	$0.616 \pm 0.011$
$A^{\text{kSZ}}$	0.00	$< 4.50$	$D_{2000}$	230.49	$230.4 \pm 1.8$	$f_{2000}^{143}$	29.47	$29.8 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.44	$7.4 \pm 1.9$	$n_{s,0.002}$	0.9665	$0.9661 \pm 0.0062$	$f_{2000}^{143 \times 217}$	32.14	$32.3 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.9$	$Y_P$	0.245346	$0.24533 \pm 0.00010$	$f_{2000}^{217}$	105.77	$105.9 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.57	$17.1 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246672	$0.24666 \pm 0.00010$	$\chi_{\text{lensing}}^2$	8.83	$9.9 \pm 1.4$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.3$	$10^5 D/H$	2.6114	$2.616 \pm 0.044$	$\chi_{\text{lowTEB}}^2$	10496.47	$10497.3 \pm 2.3$
$c_{100}$	0.99791	$0.99790 \pm 0.00078$	$\text{Age}/\text{Gyr}$	13.8063	$13.809 \pm 0.038$	$\chi_{\text{plik}}^2$	763.4	$777.3 \pm 5.7$
$c_{217}$	0.99591	$0.9959 \pm 0.0015$	$z_*$	1090.005	$1090.04 \pm 0.42$	$\chi_{\text{prior}}^2$	2.06	$7.3 \pm 3.5$
$H_0$	67.46	$67.43 \pm 0.96$	$r_*$	144.663	$144.66 \pm 0.49$	$\chi_{\text{CMB}}^2$	11268.7	$11284.5 \pm 5.7$
$\Omega_\Lambda$	0.6873	$0.687 \pm 0.013$	$100\theta_*$	1.041097	$1.04107 \pm 0.00047$			

Best-fit  $\chi_{\text{eff}}^2 = 11270.78$ ;  $\Delta\chi_{\text{eff}}^2 = -1.65$ ;  $\bar{\chi}_{\text{eff}}^2 = 11291.72$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.59$ ;  $R - 1 = 0.00620$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.83 ( $\Delta$  -0.35) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.47 ( $\Delta$  1.61) plik\_dx11dr2\_HM\_v18\_TT: 763.43 ( $\Delta$  -2.90)

## 5.2 base\_Aphipli\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022262	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.084$	Age/Gyr	13.8114	$13.812 \pm 0.026$
$\Omega_c h^2$	0.11970	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.156	$0.155 \pm 0.054$	$z_*$	1090.031	$1090.04 \pm 0.29$
$100\theta_{\text{MC}}$	1.040783	$1.04078 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.081$	$r_*$	144.591	$144.58 \pm 0.32$
$\tau$	0.0805	$0.079 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.26$	$100\theta_*$	1.040973	$1.04097 \pm 0.00032$
$\ln(10^{10} A_s)$	3.0959	$3.093 \pm 0.033$	$c_{100}$	0.99822	$0.99816 \pm 0.00077$	$D_A/\text{Gpc}$	13.8900	$13.889 \pm 0.030$
$n_s$	0.96547	$0.9647 \pm 0.0048$	$c_{217}$	0.99595	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.66 \pm 0.31$
$A_L^{\phi\phi}$	0.9376	$0.940 \pm 0.035$	$H_0$	67.32	$67.30 \pm 0.65$	$r_{\text{drag}}$	147.291	$147.28 \pm 0.31$
$y_{\text{cal}}$	1.00037	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6853	$0.6849 \pm 0.0090$	$k_D$	0.140574	$0.14058 \pm 0.00033$
$A_{217}^{\text{CIB}}$	65.4	$63.8 \pm 6.5$	$\Omega_m$	0.3147	$0.3151 \pm 0.0090$	$100\theta_D$	0.160896	$0.16090 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^2$	0.14261	$0.1427 \pm 0.0014$	$z_{\text{eq}}$	3392.5	$3394 \pm 33$
$A_{143}^{\text{tSZ}}$	7.06	$5.4 \pm 1.9$	$\Omega_m h^3$	0.096006	$0.09601 \pm 0.00030$	$k_{\text{eq}}$	0.010354	$0.01036 \pm 0.00010$
$A_{100}^{\text{PS}}$	254.2	$259 \pm 28$	$\sigma_8$	0.8319	$0.831 \pm 0.013$	$100\theta_{\text{eq}}$	0.8146	$0.8144 \pm 0.0062$
$A_{143}^{\text{PS}}$	41.8	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4666	$0.4662 \pm 0.0095$	$100\theta_{\text{s,eq}}$	0.45015	$0.4500 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.622 \pm 0.010$	$r_{\text{drag}}/D_V(0.57)$	0.071396	$0.07138 \pm 0.00049$
$A_{217}^{\text{PS}}$	100.2	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0138	$1.013 \pm 0.016$	$H(0.57)$	92.882	$92.88 \pm 0.28$
$A^{\text{kSZ}}$	0.00	$< 4.03$	$\langle d^2 \rangle^{1/2}$	2.5062	$2.505 \pm 0.038$	$D_A(0.57)$	1391.5	$1391.7 \pm 8.8$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$z_{\text{re}}$	10.20	$10.0_{-1.4}^{+1.7}$	$F_{\text{AP}}(0.57)$	0.67683	$0.6769 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	8.92	$8.9 \pm 1.8$	$10^9 A_s$	2.211	$2.206 \pm 0.072$	$f\sigma_8(0.57)$	0.4845	$0.4838 \pm 0.0077$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8821	$1.882 \pm 0.012$	$\sigma_8(0.57)$	0.6181	$0.617 \pm 0.010$
$A_{217}^{\text{dust}TT}$	82.1	$81.6 \pm 7.4$	$D_{40}$	1239.2	$1241 \pm 13$	$f_{2000}^{143}$	28.91	$29.4 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0812 \pm 0.0057$	$D_{220}$	5726.6	$5729 \pm 39$	$f_{2000}^{143 \times 217}$	31.97	$32.1 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0487	$0.0488 \pm 0.0050$	$D_{810}$	2536.4	$2536 \pm 14$	$f_{2000}^{217}$	105.53	$105.8 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0993	$0.0996 \pm 0.033$	$D_{1420}$	815.32	$814.8 \pm 4.8$	$\chi_{\text{lensing}}^2$	8.84	$9.8 \pm 1.4$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1002 \pm 0.0068$	$D_{2000}$	230.67	$230.5 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10496.95	$10497.7 \pm 2.2$
$A_{143 \times 217}^{\text{dust}EE}$	0.2241	$0.224 \pm 0.047$	$n_{s,0.002}$	0.96547	$0.9647 \pm 0.0048$	$\chi_{\text{plik}}^2$	2431.9	$2450.5 \pm 6.8$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.245345	$0.245342 \pm 0.000071$	$\chi_{\text{prior}}^2$	6.7	$19.4 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1405	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246671	$0.246668 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12937.7	$12958.1 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6118	$2.612 \pm 0.029$			

Best-fit  $\chi_{\text{eff}}^2 = 12944.37$ ;  $\Delta\chi_{\text{eff}}^2 = -2.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.68$ ;  $R - 1 = 0.01215$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.84 ( $\Delta$  -0.93) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.95 ( $\Delta$  1.67) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.88 ( $\Delta$  -3.03)

## 6 alpha1

### 6.1 base\_alpha1\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022343	$0.02239 \pm 0.00025$	$\Omega_m$	0.3177	$0.319 \pm 0.014$	$D_A/\text{Gpc}$	13.8728	$13.868 \pm 0.047$
$\Omega_c h^2$	0.12025	$0.1204 \pm 0.0023$	$\Omega_m h^2$	0.14324	$0.1434 \pm 0.0022$	$z_{\text{drag}}$	1059.89	$1060.01 \pm 0.52$
$100\theta_{\text{MC}}$	1.04061	$1.04051 \pm 0.00053$	$\Omega_m h^3$	0.096171	$0.09622 \pm 0.00048$	$r_{\text{drag}}$	147.06	$146.98 \pm 0.53$
$\tau$	0.0854	$0.088 \pm 0.021$	$\sigma_8$	0.8346	$0.835 \pm 0.016$	$k_D$	0.14088	$0.14100 \pm 0.00059$
$\alpha_{-1}$	-0.00081	$-0.0025^{+0.0025}_{-0.0011}$	$\sigma_8 \Omega_m^{0.5}$	0.4705	$0.472 \pm 0.014$	$100\theta_D$	0.160741	$0.16066 \pm 0.00031$
$\ln(10^{10} A_s)$	3.1079	$3.115 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.6266	$0.628 \pm 0.014$	$z_{\text{eq}}$	3408	$3411 \pm 52$
$n_s$	0.9619	$0.9597 \pm 0.0073$	$\sigma_8/h^{0.5}$	1.0186	$1.020 \pm 0.020$	$k_{\text{eq}}$	0.010400	$0.01041 \pm 0.00016$
$y_{\text{cal}}$	1.00029	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5194	$2.526 \pm 0.049$	$100\theta_{\text{eq}}$	0.8120	$0.8115 \pm 0.0097$
$A_{217}^{\text{CIB}}$	66.1	$63.8 \pm 6.6$	$z_{\text{re}}$	10.63	$10.8^{+2.0}_{-1.7}$	$100\theta_{s,\text{eq}}$	0.44874	$0.4484 \pm 0.0050$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$10^9 A_s$	2.237	$2.255^{+0.090}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.07120	$0.07116 \pm 0.00077$
$A_{143}^{\text{tSZ}}$	7.11	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8860	$1.888 \pm 0.015$	$H(0.57)$	92.849	$92.86^{+0.40}_{-0.46}$
$A_{100}^{\text{PS}}$	252.3	$258 \pm 28$	$D_{40}$	1222.0	$1216^{+17}_{-20}$	$D_A(0.57)$	1393.6	$1394 \pm 13$
$A_{143}^{\text{PS}}$	39.0	$43 \pm 8$	$D_{220}$	5722.2	$5727 \pm 41$	$F_{\text{AP}}(0.57)$	0.67761	$0.6778 \pm 0.0036$
$A_{143 \times 217}^{\text{PS}}$	33.7	$38 \pm 10$	$D_{810}$	2536.5	$2537 \pm 14$	$f\sigma_8(0.57)$	0.4868	$0.4874 \pm 0.0098$
$A_{217}^{\text{PS}}$	98.4	$97 \pm 10$	$D_{1420}$	814.6	$814.1 \pm 5.1$	$\sigma_8(0.57)$	0.6193	$0.620 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.71$	$D_{2000}$	230.53	$230.4 \pm 1.9$	$f_{2000}^{143}$	29.26	$29.8 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.48	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9619	$0.9597 \pm 0.0073$	$f_{2000}^{143 \times 217}$	31.98	$32.2 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.00	$9.0 \pm 1.8$	$Y_P$	0.245381	$0.24540 \pm 0.00011$	$f_{2000}^{217}$	105.62	$105.8 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.40	$17.1 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246707	$0.24673 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10494.52	$10495.0 \pm 2.6$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$10^5 D/H$	2.5965	$2.588 \pm 0.047$	$\chi_{\text{plik}}^2$	764.3	$779.7 \pm 6.0$
$c_{100}$	0.99796	$0.99791 \pm 0.00077$	Age/Gyr	13.8105	$13.809 \pm 0.040$	$\chi_{\text{prior}}^2$	1.91	$7.3 \pm 3.5$
$c_{217}$	0.99583	$0.9959 \pm 0.0015$	$z_*$	1089.976	$1089.93 \pm 0.44$	$\chi_{\text{CMB}}^2$	11258.8	$11274.7 \pm 5.7$
$H_0$	67.14	$67.1 \pm 1.0$	$r_*$	144.39	$144.33 \pm 0.52$			
$\Omega_\Lambda$	0.6823	$0.681 \pm 0.014$	$100\theta_*$	1.04080	$1.04069 \pm 0.00053$			

Best-fit  $\chi_{\text{eff}}^2 = 11260.72$ ;  $\Delta\chi_{\text{eff}}^2 = -1.20$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.01$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.00523$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.52 ( $\Delta$  -1.95) plik\_dx11dr2\_HM\_v18\_TT: 764.30 ( $\Delta$  0.93)

## 6.2 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022397	$0.02246 \pm 0.00023$	$\Omega_m h^2$	0.14199	$0.1422 \pm 0.0012$	$r_{\text{drag}}$	147.338	$147.23 \pm 0.37$
$\Omega_c h^2$	0.11895	$0.1191 \pm 0.0013$	$\Omega_m h^3$	0.096148	$0.09623 \pm 0.00049$	$k_D$	0.140627	$0.14079 \pm 0.00050$
$100\theta_{\text{MC}}$	1.040817	$1.04069 \pm 0.00046$	$\sigma_8$	0.8326	$0.835 \pm 0.016$	$100\theta_D$	0.160740	$0.16064 \pm 0.00031$
$\tau$	0.0884	$0.093 \pm 0.020$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.465 \pm 0.010$	$z_{\text{eq}}$	3377.8	$3383 \pm 30$
$\alpha_{-1}$	-0.00060	$-0.0023^{+0.0024}_{-0.0011}$	$\sigma_8 \Omega_m^{0.25}$	0.6211	$0.623 \pm 0.012$	$k_{\text{eq}}$	0.010309	$0.010326 \pm 0.000091$
$\ln(10^{10} A_s)$	3.1105	$3.121 \pm 0.041$	$\sigma_8/h^{0.5}$	1.0119	$1.015 \pm 0.019$	$100\theta_{\text{eq}}$	0.8177	$0.8168 \pm 0.0055$
$n_s$	0.9654	$0.9631 \pm 0.0053$	$\langle d^2 \rangle^{1/2}$	2.5034	$2.515 \pm 0.047$	$100\theta_{s,\text{eq}}$	0.45165	$0.4511 \pm 0.0028$
$y_{\text{cal}}$	1.00032	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.85	$11.1 \pm 1.7$	$r_{\text{drag}}/D_V(0.57)$	0.071653	$0.07158 \pm 0.00043$
$A_{217}^{\text{CIB}}$	66.3	$63.5 \pm 6.5$	$10^9 A_s$	2.243	$2.269^{+0.090}_{-0.10}$	$H(0.57)$	93.071	$93.07 \pm 0.28$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$10^9 A_s e^{-2\tau}$	1.8795	$1.882 \pm 0.012$	$D_A(0.57)$	1386.0	$1386.6 \pm 7.8$
$A_{143}^{\text{tSZ}}$	7.09	$5.2 \pm 1.9$	$D_{40}$	1219.1	$1213^{+16}_{-19}$	$F_{\text{AP}}(0.57)$	0.67557	$0.6758 \pm 0.0020$
$A_{100}^{\text{PS}}$	251.9	$257 \pm 28$	$D_{220}$	5724.9	$5731 \pm 41$	$f\sigma_8(0.57)$	0.4836	$0.4853 \pm 0.0093$
$A_{143}^{\text{PS}}$	38.4	$42 \pm 8$	$D_{810}$	2534.9	$2536 \pm 14$	$\sigma_8(0.57)$	0.6199	$0.621 \pm 0.012$
$A_{143 \times 217}^{\text{PS}}$	32.5	$38 \pm 10$	$D_{1420}$	815.14	$814.8 \pm 5.0$	$f_{2000}^{143}$	29.19	$29.4 \pm 2.9$
$A_{217}^{\text{PS}}$	97.5	$97 \pm 10$	$D_{2000}$	230.77	$230.7 \pm 1.8$	$f_{2000}^{143 \times 217}$	31.81	$31.8 \pm 2.1$
$A^{\text{kSZ}}$	0.02	$< 4.55$	$n_{s,0.002}$	0.9654	$0.9631 \pm 0.0053$	$f_{2000}^{217}$	105.46	$105.5 \pm 2.0$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$Y_P$	0.245405	$0.24543 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10494.69	$10495.3 \pm 2.7$
$A_{143}^{\text{dustTT}}$	8.94	$9.0 \pm 1.9$	$Y_P^{\text{BBN}}$	0.246731	$0.24676 \pm 0.00010$	$\chi_{\text{plik}}^2$	764.4	$779.2 \pm 9.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.36	$17.0 \pm 4.2$	$10^5 \text{D/H}$	2.5862	$2.575 \pm 0.043$	$\chi_{6\text{DF}}^2$	0.0219	$0.073 \pm 0.091$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	Age/Gyr	13.7932	$13.792 \pm 0.030$	$\chi_{\text{MGS}}^2$	1.28	$1.27 \pm 0.54$
$c_{100}$	0.99793	$0.99790 \pm 0.00077$	$z_*$	1089.793	$1089.74 \pm 0.33$	$\chi_{\text{DR11CMass}}^2$	2.468	$3.00 \pm 0.80$
$c_{217}$	0.99588	$0.9958 \pm 0.0015$	$r_*$	144.681	$144.59 \pm 0.34$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.85 \pm 0.66$
$H_0$	67.71	$67.66 \pm 0.58$	$100\theta_*$	1.041006	$1.04087 \pm 0.00046$	$\chi_{\text{prior}}^2$	1.96	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6903	$0.6892 \pm 0.0077$	$D_A/\text{Gpc}$	13.8982	$13.892 \pm 0.032$	$\chi_{\text{CMB}}^2$	11259.1	$11274.5 \pm 9.6$
$\Omega_m$	0.3097	$0.3108 \pm 0.0077$	$z_{\text{drag}}$	1059.93	$1060.07 \pm 0.52$	$\chi_{\text{BAO}}^2$	4.38	$5.2 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 11265.42$ ;  $\Delta\chi_{\text{eff}}^2 = -1.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.58$ ;  $R - 1 = 0.00775$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.47 ( $\Delta$  0.02) DR11LOWZ: 0.61 ( $\Delta$  -0.00) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.69 ( $\Delta$  -1.73) plik\_dx11dr2\_HM\_v18\_TT: 764.38 ( $\Delta$  0.78)

### 6.3 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022369	$0.02243 \pm 0.00025$	$\Omega_m$	0.3142	$0.315 \pm 0.013$	$D_A/\text{Gpc}$	13.8833	$13.879 \pm 0.045$
$\Omega_c h^2$	0.11969	$0.1198 \pm 0.0021$	$\Omega_m h^2$	0.14271	$0.1429 \pm 0.0020$	$z_{\text{drag}}$	1059.89	$1060.05 \pm 0.52$
$100\theta_{\text{MC}}$	1.04072	$1.04059 \pm 0.00052$	$\Omega_m h^3$	0.096172	$0.09623 \pm 0.00048$	$r_{\text{drag}}$	147.17	$147.09 \pm 0.51$
$\tau$	0.0874	$0.091 \pm 0.021$	$\sigma_8$	0.8342	$0.835 \pm 0.016$	$k_D$	0.14078	$0.14091 \pm 0.00058$
$\alpha_{-1}$	-0.00077	$-0.0024^{+0.0025}_{-0.0011}$	$\sigma_8 \Omega_m^{0.5}$	0.4676	$0.469 \pm 0.013$	$100\theta_D$	0.160736	$0.16064 \pm 0.00031$
$\ln(10^{10} A_s)$	3.1103	$3.118 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.626 \pm 0.014$	$z_{\text{eq}}$	3394.9	$3399 \pm 48$
$n_s$	0.9633	$0.9613 \pm 0.0070$	$\sigma_8/h^{0.5}$	1.0162	$1.018 \pm 0.020$	$k_{\text{eq}}$	0.010362	$0.01037 \pm 0.00015$
$y_{\text{cal}}$	1.00032	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5138	$2.521 \pm 0.049$	$100\theta_{\text{eq}}$	0.8144	$0.8139 \pm 0.0091$
$A_{217}^{\text{CIB}}$	66.5	$63.7 \pm 6.6$	$z_{\text{re}}$	10.78	$11.0^{+1.9}_{-1.7}$	$100\theta_{s,\text{eq}}$	0.44997	$0.4497 \pm 0.0047$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s$	2.243	$2.262 \pm 0.094$	$r_{\text{drag}}/D_V(0.57)$	0.07140	$0.07135 \pm 0.00072$
$A_{143}^{\text{tSZ}}$	7.15	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8833	$1.886 \pm 0.014$	$H(0.57)$	92.947	$92.96^{+0.39}_{-0.44}$
$A_{100}^{\text{PS}}$	252.0	$257 \pm 28$	$D_{40}$	1220.2	$1215^{+17}_{-20}$	$D_A(0.57)$	1390.3	$1390 \pm 13$
$A_{143}^{\text{PS}}$	39.0	$43 \pm 8$	$D_{220}$	5723.2	$5729 \pm 41$	$F_{\text{AP}}(0.57)$	0.67672	$0.6769 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	33.8	$38 \pm 10$	$D_{810}$	2535.8	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4857	$0.4865 \pm 0.0098$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{1420}$	814.8	$814.5 \pm 5.1$	$\sigma_8(0.57)$	0.6199	$0.621 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.65$	$D_{2000}$	230.63	$230.6 \pm 1.9$	$f_{2000}^{143}$	29.29	$29.6 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9633	$0.9613 \pm 0.0070$	$f_{2000}^{143 \times 217}$	32.00	$32.0 \pm 2.2$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$Y_P$	0.245392	$0.24542 \pm 0.00011$	$f_{2000}^{217}$	105.62	$105.7 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.57	$17.0 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246719	$0.24674 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10494.57	$10495.1 \pm 2.7$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$10^5 D/H$	2.5915	$2.581 \pm 0.046$	$\chi_{\text{plik}}^2$	764.2	$780 \pm 13$
$c_{100}$	0.99793	$0.99791 \pm 0.00078$	Age/Gyr	13.8025	$13.801 \pm 0.038$	$\chi_{\text{JLA}}^2$	706.834	$707.00 \pm 0.50$
$c_{217}$	0.99591	$0.9959 \pm 0.0014$	$z_*$	1089.895	$1089.84 \pm 0.42$	$\chi_{\text{prior}}^2$	2.02	$7.3 \pm 3.8$
$H_0$	67.39	$67.37 \pm 0.94$	$r_*$	144.511	$144.44 \pm 0.49$	$\chi_{\text{CMB}}^2$	11258.8	$11270 \pm 13$
$\Omega_\Lambda$	0.6858	$0.685 \pm 0.013$	$100\theta_*$	1.04089	$1.04077 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 11967.60$ ;  $\Delta\chi_{\text{eff}}^2 = -1.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00412$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014.10.03.v5c\_Ap: 10494.57 ( $\Delta$  -1.88) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta$  0.76) SN - JLA December\_2013: 706.83 ( $\Delta$  0.07)



## 6.4 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022335	$0.02238 \pm 0.00025$	$\Omega_m$	0.3090	$0.310 \pm 0.013$	$D_A/\text{Gpc}$	13.9061	$13.901 \pm 0.043$
$\Omega_c h^2$	0.11880	$0.1189 \pm 0.0021$	$\Omega_m h^2$	0.14178	$0.1419 \pm 0.0020$	$z_{\text{drag}}$	1059.78	$1059.89 \pm 0.53$
$100\theta_{\text{MC}}$	1.04087	$1.04077 \pm 0.00052$	$\Omega_m h^3$	0.096026	$0.09609 \pm 0.00047$	$r_{\text{drag}}$	147.449	$147.37 \pm 0.48$
$\tau$	0.0694	$0.071^{+0.017}_{-0.020}$	$\sigma_8$	0.8166	$0.8167 \pm 0.0098$	$k_D$	0.14046	$0.14058 \pm 0.00054$
$\alpha_{-1}$	-0.00039	$-0.0018^{+0.0020}_{-0.0010}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.4545 \pm 0.0091$	$100\theta_D$	0.160838	$0.16076 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0710	$3.076^{+0.032}_{-0.035}$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.6092 \pm 0.0078$	$z_{\text{eq}}$	3372.6	$3376 \pm 48$
$n_s$	0.9656	$0.9632 \pm 0.0071$	$\sigma_8/h^{0.5}$	0.9923	$0.992 \pm 0.011$	$k_{\text{eq}}$	0.010293	$0.01030 \pm 0.00015$
$y_{\text{cal}}$	1.00009	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4554	$2.460 \pm 0.027$	$100\theta_{\text{eq}}$	0.8185	$0.8180^{+0.0087}_{-0.0098}$
$A_{217}^{\text{CIB}}$	67.4	$64.4 \pm 6.4$	$z_{\text{re}}$	9.14	$9.2 \pm 1.6$	$100\theta_{s,\text{eq}}$	0.45212	$0.4518 \pm 0.0047$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.156	$2.169^{+0.066}_{-0.079}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.07167^{+0.00069}_{-0.00079}$
$A_{143}^{\text{tSZ}}$	7.19	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8769	$1.879 \pm 0.014$	$H(0.57)$	93.051	$93.07^{+0.38}_{-0.49}$
$A_{100}^{\text{PS}}$	254.2	$261 \pm 28$	$D_{40}$	1213.5	$1207^{+15}_{-21}$	$D_A(0.57)$	1386.0	$1386^{+14}_{-12}$
$A_{143}^{\text{PS}}$	39.2	$44 \pm 8$	$D_{220}$	5718.7	$5724 \pm 40$	$F_{\text{AP}}(0.57)$	0.67541	$0.6756 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	32.6	$38^{+10}_{-10}$	$D_{810}$	2533.7	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4742	$0.4743 \pm 0.0055$
$A_{217}^{\text{PS}}$	97.0	$96 \pm 10$	$D_{1420}$	814.8	$814.2 \pm 5.1$	$\sigma_8(0.57)$	0.6081	$0.6080 \pm 0.0089$
$A^{\text{kSZ}}$	0.01	$< 5.28$	$D_{2000}$	230.16	$229.9 \pm 1.9$	$f_{2000}^{143}$	29.99	$30.5 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9656	$0.9632 \pm 0.0071$	$f_{2000}^{143 \times 217}$	32.55	$32.7 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.9$	$Y_P$	0.245377	$0.24540 \pm 0.00011$	$f_{2000}^{217}$	106.08	$106.2 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.65	$17.2^{+4.5}_{-4.1}$	$Y_P^{\text{BBN}}$	0.246704	$0.24672 \pm 0.00011$	$\chi_{\text{lensing}}^2$	9.43	$10.2 \pm 1.8$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.5$	$10^5 D/H$	2.5980	$2.589 \pm 0.048$	$\chi_{\text{lowTEB}}^2$	10493.35	$10493.7 \pm 2.0$
$c_{100}$	0.99791	$0.99789 \pm 0.00077$	Age/Gyr	13.7975	$13.795^{+0.043}_{-0.038}$	$\chi_{\text{plik}}^2$	766.9	$782.1 \pm 6.1$
$c_{217}$	0.99596	$0.9959^{+0.0014}_{-0.0016}$	$z_*$	1089.858	$1089.81 \pm 0.44$	$\chi_{\text{prior}}^2$	2.07	$7.4 \pm 3.7$
$H_0$	67.73	$67.71^{+0.90}_{-1.1}$	$r_*$	144.770	$144.71 \pm 0.48$	$\chi_{\text{CMB}}^2$	11269.7	$11286.0 \pm 6.0$
$\Omega_\Lambda$	0.6910	$0.690 \pm 0.013$	$100\theta_*$	1.04106	$1.04096 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 11271.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.66$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.15$ ;  $R - 1 = 0.01968$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.43 ( $\Delta$  0.25) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.35 ( $\Delta$  -1.50) plik\_dx11dr2\_HM\_v18.TT: 766.92 ( $\Delta$  0.60)

## 6.5 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022385	$0.02243 \pm 0.00025$	$\Omega_m$	0.3131	$0.315 \pm 0.014$	$D_A/\text{Gpc}$	13.8862	$13.879 \pm 0.046$
$\Omega_c h^2$	0.11952	$0.1197 \pm 0.0022$	$\Omega_m h^2$	0.14255	$0.1428 \pm 0.0021$	$z_{\text{drag}}$	1059.93	$1060.06 \pm 0.53$
$100\theta_{\text{MC}}$	1.04074	$1.04060 \pm 0.00053$	$\Omega_m h^3$	0.096183	$0.09624 \pm 0.00048$	$r_{\text{drag}}$	147.20	$147.09 \pm 0.51$
$\tau$	0.0879	$0.091 \pm 0.021$	$\sigma_8$	0.8340	$0.835 \pm 0.016$	$k_D$	0.14076	$0.14091 \pm 0.00058$
$\alpha_{-1}$	-0.00076	$-0.0024^{+0.0025}_{-0.0011}$	$\sigma_8 \Omega_m^{0.5}$	0.4667	$0.469 \pm 0.013$	$100\theta_D$	0.160725	$0.16063 \pm 0.00031$
$\ln(10^{10} A_s)$	3.1110	$3.119 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.6239	$0.626 \pm 0.014$	$z_{\text{eq}}$	3391.1	$3398 \pm 50$
$n_s$	0.9637	$0.9614 \pm 0.0072$	$\sigma_8/h^{0.5}$	1.0153	$1.018 \pm 0.020$	$k_{\text{eq}}$	0.010350	$0.01037 \pm 0.00015$
$y_{\text{cal}}$	1.00027	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5121	$2.521 \pm 0.049$	$100\theta_{\text{eq}}$	0.8152	$0.8142 \pm 0.0094$
$A_{217}^{\text{CIB}}$	66.9	$63.6 \pm 6.5$	$z_{\text{re}}$	10.82	$11.0^{+1.9}_{-1.7}$	$100\theta_{s,\text{eq}}$	0.45035	$0.4498 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$10^9 A_s$	2.244	$2.263 \pm 0.094$	$r_{\text{drag}}/D_V(0.57)$	0.07146	$0.07138 \pm 0.00074$
$A_{143}^{\text{tSZ}}$	7.16	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8825	$1.885 \pm 0.015$	$H(0.57)$	92.983	$92.98^{+0.40}_{-0.46}$
$A_{100}^{\text{PS}}$	251.4	$257 \pm 28$	$D_{40}$	1220.0	$1215^{+17}_{-20}$	$D_A(0.57)$	1389.1	$1390 \pm 13$
$A_{143}^{\text{PS}}$	39.1	$43 \pm 8$	$D_{220}$	5724.9	$5729 \pm 41$	$F_{\text{AP}}(0.57)$	0.67644	$0.6768 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	34.1	$38 \pm 10$	$D_{810}$	2535.7	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4853	$0.4864 \pm 0.0098$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$D_{1420}$	814.9	$814.6 \pm 5.0$	$\sigma_8(0.57)$	0.6200	$0.621 \pm 0.012$
$A^{\text{kSZ}}$	0.00	$< 4.60$	$D_{2000}$	230.68	$230.6 \pm 1.9$	$f_{2000}^{143}$	29.16	$29.5 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9637	$0.9614 \pm 0.0072$	$f_{2000}^{143 \times 217}$	31.90	$31.9 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.8$	$Y_P$	0.245399	$0.24542 \pm 0.00011$	$f_{2000}^{217}$	105.45	$105.6 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.0 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246726	$0.24675 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10494.61	$10495.2 \pm 2.7$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$10^5 D/H$	2.5886	$2.580 \pm 0.047$	$\chi_{\text{plik}}^2$	764.2	$779.6 \pm 8.4$
$c_{100}$	0.99791	$0.99791 \pm 0.00077$	Age/Gyr	13.7994	$13.799 \pm 0.039$	$\chi_{\text{H070p6}}^2$	0.88	$1.00 \pm 0.56$
$c_{217}$	0.99590	$0.9959 \pm 0.0014$	$z_*$	1089.859	$1089.82 \pm 0.43$	$\chi_{\text{prior}}^2$	2.04	$7.3 \pm 3.6$
$H_0$	67.47	$67.40 \pm 0.97$	$r_*$	144.54	$144.45 \pm 0.51$	$\chi_{\text{CMB}}^2$	11258.8	$11274.8 \pm 8.3$
$\Omega_\Lambda$	0.6869	$0.685 \pm 0.014$	$100\theta_*$	1.04092	$1.04078 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.72$ ;  $\Delta\chi_{\text{eff}}^2 = -1.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00545$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10494.61 ( $\Delta$  -1.71) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta$  0.52) Hubble - H070p6: 0.88 ( $\Delta$  0.05)

## 6.6 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022360	$0.02242 \pm 0.00023$	$\Omega_m h^3$	0.096034	$0.09610 \pm 0.00047$	$100\theta_D$	0.160829	$0.16073^{+0.00029}_{-0.00033}$
$\Omega_c h^2$	0.11837	$0.1184 \pm 0.0012$	$\sigma_8$	0.8171	$0.8173 \pm 0.0094$	$z_{\text{eq}}$	3363.0	$3366 \pm 28$
$100\theta_{\text{MC}}$	1.040946	$1.04083 \pm 0.00045$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4527 \pm 0.0067$	$k_{\text{eq}}$	0.010264	$0.010273 \pm 0.000085$
$\tau$	0.0718	$0.074 \pm 0.014$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.6082 \pm 0.0072$	$100\theta_{\text{eq}}$	0.8204	$0.8200 \pm 0.0052$
$\alpha_{-1}$	-0.00043	$-0.0017^{+0.0020}_{-0.0011}$	$\sigma_8/h^{0.5}$	0.9914	$0.992 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45308	$0.4528 \pm 0.0027$
$\ln(10^{10} A_s)$	3.0754	$3.081 \pm 0.028$	$\langle d^2 \rangle^{1/2}$	2.4540	$2.458 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071858	$0.07182 \pm 0.00041$
$n_s$	0.9664	$0.9645^{+0.0051}_{-0.0057}$	$z_{\text{re}}$	9.36	$9.5^{+1.4}_{-1.2}$	$H(0.57)$	93.134	$93.15^{+0.26}_{-0.30}$
$y_{\text{cal}}$	1.00019	$1.0001 \pm 0.0025$	$10^9 A_s$	2.166	$2.179 \pm 0.060$	$D_A(0.57)$	1383.4	$1383.4 \pm 7.5$
$A_{217}^{\text{CIB}}$	67.6	$64.3 \pm 6.5$	$10^9 A_s e^{-2\tau}$	1.8760	$1.877 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67473	$0.6748 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1212.5	$1206^{+15}_{-21}$	$f\sigma_8(0.57)$	0.4737	$0.4740 \pm 0.0054$
$A_{143}^{\text{tSZ}}$	7.22	$5.0 \pm 2.0$	$D_{220}$	5723.0	$5726 \pm 41$	$\sigma_8(0.57)$	0.6091	$0.6092 \pm 0.0075$
$A_{100}^{\text{PS}}$	253.9	$261 \pm 28$	$D_{810}$	2534.1	$2533 \pm 14$	$f_{2000}^{143}$	29.91	$30.3 \pm 2.9$
$A_{143}^{\text{PS}}$	39.0	$43^{+8}_{-8}$	$D_{1420}$	815.1	$814.4 \pm 5.2$	$f_{2000}^{143 \times 217}$	32.44	$32.6 \pm 2.1$
$A_{143 \times 217}^{\text{PS}}$	32.3	$38^{+10}_{-10}$	$D_{2000}$	230.31	$230.1 \pm 1.8$	$f_{2000}^{217}$	106.03	$106.1 \pm 2.1$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$n_{\text{s},0.002}$	0.9664	$0.9645^{+0.0051}_{-0.0057}$	$\chi^2_{\text{lensing}}$	9.27	$10.0 \pm 1.6$
$A^{\text{kSZ}}$	0.00	$< 5.34$	$Y_{\text{P}}$	0.245388	$0.24541 \pm 0.00010$	$\chi^2_{\text{lowTEB}}$	10493.30	$10493.6 \pm 1.9$
$A_{100}^{\text{dustTT}}$	7.49	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246715	$0.24674 \pm 0.00010$	$\chi^2_{\text{plik}}$	767.2	$783 \pm 22$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.9$	$10^5 \text{D/H}$	2.5933	$2.582 \pm 0.042$	$\chi^2_{\text{H070p6}}$	0.647	$0.68 \pm 0.26$
$A_{143 \times 217}^{\text{dustTT}}$	17.79	$17.2 \pm 4.2$	Age/Gyr	13.7908	$13.788 \pm 0.029$	$\chi^2_{\text{JLA}}$	706.621	$706.67 \pm 0.17$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.5$	$z_*$	1089.790	$1089.72 \pm 0.33$	$\chi^2_{6\text{DF}}$	0.0029	$0.042 \pm 0.058$
$c_{100}$	0.99793	$0.99790 \pm 0.00076$	$r_*$	144.862	$144.80 \pm 0.32$	$\chi^2_{\text{MGS}}$	1.54	$1.57 \pm 0.56$
$c_{217}$	0.99602	$0.9960 \pm 0.0014$	$100\theta_*$	1.041134	$1.04101 \pm 0.00045$	$\chi^2_{\text{DR11CMass}}$	2.421	$2.84 \pm 0.60$
$H_0$	67.93	$67.92 \pm 0.55$	$D_A/\text{Gpc}$	13.9139	$13.910 \pm 0.031$	$\chi^2_{\text{DR11LOWZ}}$	0.372	$0.53 \pm 0.48$
$\Omega_\Lambda$	0.6936	$0.6932 \pm 0.0072$	$z_{\text{drag}}$	1059.78	$1059.93 \pm 0.51$	$\chi^2_{\text{prior}}$	2.09	$7.5 \pm 3.9$
$\Omega_m$	0.3064	$0.3068 \pm 0.0072$	$r_{\text{drag}}$	147.537	$147.46 \pm 0.36$	$\chi^2_{\text{CMB}}$	11269.7	$11290 \pm 22$
$\Omega_m h^2$	0.14137	$0.1415 \pm 0.0012$	$k_D$	0.140391	$0.14052 \pm 0.00048$	$\chi^2_{\text{BAO}}$	4.34	$4.98 \pm 0.90$

Best-fit  $\chi^2_{\text{eff}} = 11983.43$ ;  $\Delta\chi^2_{\text{eff}} = -0.64$ ;  $\bar{\chi}^2_{\text{eff}} = 12006.07$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.05$ ;  $R - 1 = 0.02161$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  0.00) MGS: 1.54 ( $\Delta$  0.00) DR11CMass: 2.42 ( $\Delta$  0.01) DR11LOWZ: 0.37 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.27 ( $\Delta$  0.01) lowl\_SMW\_70\_dx11d\_2014\_10\_03.v  
10493.30 ( $\Delta$  -1.61) plik\_dx11dr2\_HM\_v18\_TT: 767.16 ( $\Delta$  1.03) Hubble - H070p6: 0.65 ( $\Delta$  -0.02) SN - JLA December\_2013: 706.62 ( $\Delta$  -0.01)

## 6.7 base\_alpha1\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02239 \pm 0.00025$	$\Omega_m$	$0.319 \pm 0.014$	$D_A/\text{Gpc}$	$13.868 \pm 0.047$
$\Omega_c h^2$	$0.1203 \pm 0.0023$	$\Omega_m h^2$	$0.1434 \pm 0.0022$	$z_{\text{drag}}$	$1060.01 \pm 0.52$
$100\theta_{\text{MC}}$	$1.04051 \pm 0.00053$	$\Omega_m h^3$	$0.09623 \pm 0.00048$	$r_{\text{drag}}$	$146.98 \pm 0.53$
$\tau$	$0.089^{+0.020}_{-0.022}$	$\sigma_8$	$0.836 \pm 0.015$	$k_D$	$0.14100 \pm 0.00059$
$\alpha_{-1}$	$-0.0025^{+0.0026}_{-0.0011}$	$\sigma_8 \Omega_m^{0.5}$	$0.472 \pm 0.014$	$100\theta_D$	$0.16066 \pm 0.00031$
$\ln(10^{10} A_s)$	$3.116 \pm 0.040$	$\sigma_8 \Omega_m^{0.25}$	$0.628 \pm 0.014$	$z_{\text{eq}}$	$3411 \pm 51$
$n_s$	$0.9598 \pm 0.0073$	$\sigma_8/h^{0.5}$	$1.020 \pm 0.020$	$k_{\text{eq}}$	$0.01041 \pm 0.00016$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.527 \pm 0.048$	$100\theta_{\text{eq}}$	$0.8116 \pm 0.0096$
$A_{217}^{\text{CIB}}$	$63.7 \pm 6.5$	$z_{\text{re}}$	$10.9 \pm 1.7$	$100\theta_{\text{s,eq}}$	$0.4485 \pm 0.0050$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.258^{+0.085}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	$0.07117 \pm 0.00077$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.888 \pm 0.015$	$H(0.57)$	$92.86^{+0.40}_{-0.46}$
$A_{100}^{\text{PS}}$	$258 \pm 28$	$D_{40}$	$1216 \pm 18$	$D_A(0.57)$	$1394 \pm 13$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$D_{220}$	$5727 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6778 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	$38 \pm 10$	$D_{810}$	$2537 \pm 14$	$f\sigma_8(0.57)$	$0.4877 \pm 0.0096$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{1420}$	$814.1 \pm 5.1$	$\sigma_8(0.57)$	$0.620^{+0.011}_{-0.013}$
$A^{\text{kSZ}}$	$< 4.67$	$D_{2000}$	$230.4 \pm 1.9$	$f_{2000}^{143}$	$29.7 \pm 3.0$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	$0.9598 \pm 0.0073$	$f_{2000}^{143 \times 217}$	$32.1 \pm 2.1$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.9$	$Y_{\text{P}}$	$0.24540 \pm 0.00011$	$f_{2000}^{217}$	$105.8 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.24673 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	$10495.0 \pm 2.6$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.5$	$10^5 \text{D/H}$	$2.587 \pm 0.047$	$\chi_{\text{plik}}^2$	$779.7 \pm 8.1$
$c_{100}$	$0.99791 \pm 0.00077$	$\text{Age/Gyr}$	$13.808 \pm 0.040$	$\chi_{\text{prior}}^2$	$7.2 \pm 3.5$
$c_{217}$	$0.9959 \pm 0.0014$	$z_*$	$1089.92 \pm 0.44$	$\chi_{\text{CMB}}^2$	$11274.7 \pm 7.9$
$H_0$	$67.1 \pm 1.0$	$r_*$	$144.33 \pm 0.52$		
$\Omega_\Lambda$	$0.681 \pm 0.014$	$100\theta_*$	$1.04069 \pm 0.00053$		

$$\bar{\chi}_{\text{eff}}^2 = 11281.96; \Delta\bar{\chi}_{\text{eff}}^2 = 0.32; R - 1 = 0.00567$$

## 6.8 base\_alpha1\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022269	$0.02225 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.085$	Age/Gyr	13.8059	$13.805 \pm 0.029$
$\Omega_c h^2$	0.11941	$0.1192 \pm 0.0018$	$A_{143}^{\text{dustTE}}$	0.154	$0.154 \pm 0.054$	$z_*$	1089.998	$1090.01 \pm 0.30$
$100\theta_{\text{MC}}$	1.040901	$1.04096^{+0.00052}_{-0.00044}$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.338 \pm 0.080$	$r_*$	144.660	$144.74^{+0.48}_{-0.43}$
$\tau$	0.0819	$0.080 \pm 0.017$	$A_{217}^{\text{dustTE}}$	1.665	$1.67 \pm 0.25$	$100\theta_*$	1.041091	$1.04115^{+0.00053}_{-0.00043}$
$\alpha_{-1}$	0.00004	$0.00031^{+0.00044}_{-0.00063}$	$c_{100}$	0.99818	$0.99815 \pm 0.00077$	$D_A/\text{Gpc}$	13.8950	$13.901 \pm 0.039$
$\ln(10^{10} A_s)$	3.0976	$3.092 \pm 0.033$	$c_{217}$	0.99595	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.666	$1059.59 \pm 0.33$
$n_s$	0.9667	$0.9675^{+0.0080}_{-0.0066}$	$H_0$	67.47	$67.55 \pm 0.82$	$r_{\text{drag}}$	147.359	$147.44^{+0.49}_{-0.43}$
$y_{\text{cal}}$	1.00029	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6873	$0.688^{+0.013}_{-0.011}$	$k_D$	0.140508	$0.14040^{+0.00045}_{-0.00054}$
$A_{217}^{\text{CIB}}$	65.3	$63.7 \pm 6.6$	$\Omega_m$	0.3127	$0.312^{+0.011}_{-0.013}$	$100\theta_D$	0.160912	$0.16096 \pm 0.00021$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.23	—	$\Omega_m h^2$	0.14233	$0.1421^{+0.0017}_{-0.0019}$	$z_{\text{eq}}$	3385.8	$3380^{+41}_{-46}$
$A_{143}^{\text{tSZ}}$	7.04	$5.4 \pm 1.9$	$\Omega_m h^3$	0.096026	$0.09597 \pm 0.00031$	$k_{\text{eq}}$	0.010334	$0.01032^{+0.00013}_{-0.00014}$
$A_{100}^{\text{PS}}$	254.0	$259 \pm 27$	$\sigma_8$	0.8325	$0.830 \pm 0.013$	$100\theta_{\text{eq}}$	0.8159	$0.8170 \pm 0.0081$
$A_{143}^{\text{PS}}$	41.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4655	$0.463 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45084	$0.4514 \pm 0.0042$
$A_{143 \times 217}^{\text{PS}}$	39.3	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6226	$0.620 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.07160 \pm 0.00065$
$A_{217}^{\text{PS}}$	100.1	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0136	$1.010 \pm 0.017$	$H(0.57)$	92.945	$92.97 \pm 0.34$
$A^{\text{kSZ}}$	0.00	$< 3.98$	$\langle d^2 \rangle^{1/2}$	2.5054	$2.498 \pm 0.043$	$D_A(0.57)$	1389.5	$1389 \pm 11$
$A_{100}^{\text{dustTT}}$	7.35	$7.4 \pm 1.9$	$z_{\text{re}}$	10.32	$10.1^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67633	$0.6760^{+0.0028}_{-0.0031}$
$A_{143}^{\text{dustTT}}$	8.94	$8.9 \pm 1.8$	$10^9 A_s$	2.214	$2.204 \pm 0.074$	$f\sigma_8(0.57)$	0.4844	$0.4828 \pm 0.0083$
$A_{143 \times 217}^{\text{dustTT}}$	17.77	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8800	$1.878 \pm 0.014$	$\sigma_8(0.57)$	0.6191	$0.618 \pm 0.010$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.4$	$D_{40}$	1242.7	$1245 \pm 15$	$f_{2000}^{143}$	28.88	$29.3 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0812	$0.0810 \pm 0.0056$	$D_{220}$	5727.4	$5726 \pm 39$	$f_{2000}^{143 \times 217}$	31.93	$32.1 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.0486	$0.0485 \pm 0.0050$	$D_{810}$	2535.5	$2535 \pm 14$	$f_{2000}^{217}$	105.52	$105.7 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0987	$0.0999 \pm 0.032$	$D_{1420}$	815.37	$815.2 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.79	$10498.9 \pm 3.0$
$A_{143}^{\text{dustEE}}$	0.0998	$0.0998 \pm 0.0069$	$D_{2000}$	230.75	$230.6 \pm 1.7$	$\chi_{\text{plik}}^2$	2430.9	$2451.1 \pm 7.3$
$A_{143 \times 217}^{\text{dustEE}}$	0.2257	$0.224 \pm 0.046$	$n_{s,0.002}$	0.9667	$0.9675^{+0.0080}_{-0.0066}$	$\chi_{\text{prior}}^2$	6.7	$19.2 \pm 5.5$
$A_{217}^{\text{dustEE}}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.245348	$0.245336 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12928.6	$12950.0 \pm 7.0$
$A_{100}^{\text{dustTE}}$	0.1403	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246675	$0.246662 \pm 0.000072$			
$A_{100 \times 143}^{\text{dustTE}}$	0.1313	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6104	$2.615 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.39$ ;  $\Delta\chi_{\text{eff}}^2 = -0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.55$ ;  $R - 1 = 0.00701$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.79 ( $\Delta$  0.86) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.86 ( $\Delta$  -0.79)

## 6.9 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022273	$0.02225 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$r_*$	144.773	$144.82 \pm 0.29$
$\Omega_c h^2$	0.11897	$0.1188 \pm 0.0012$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$100\theta_*$	1.041153	$1.04124 \pm 0.00038$
$100\theta_{\text{MC}}$	1.040965	$1.04104 \pm 0.00038$	$A_{217}^{\text{dust}TE}$	1.673	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.9051	$13.909 \pm 0.026$
$\tau$	0.0805	$0.081 \pm 0.017$	$c_{100}$	0.99816	$0.99814 \pm 0.00076$	$z_{\text{drag}}$	1059.628	$1059.58 \pm 0.34$
$\alpha_{-1}$	0.000071	$0.00039^{+0.00035}_{-0.00058}$	$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	147.474	$147.53 \pm 0.31$
$\ln(10^{10} A_s)$	3.0933	$3.093 \pm 0.033$	$H_0$	67.65	$67.71 \pm 0.52$	$k_D$	0.140389	$0.14031^{+0.00036}_{-0.00040}$
$n_s$	0.9680	$0.9688^{+0.0055}_{-0.0049}$	$\Omega_\Lambda$	0.6900	$0.6907 \pm 0.0070$	$100\theta_D$	0.160932	$0.16098^{+0.00023}_{-0.00020}$
$y_{\text{cal}}$	1.00033	$1.0005 \pm 0.0025$	$\Omega_m$	0.3100	$0.3093 \pm 0.0070$	$z_{\text{eq}}$	3375.2	$3372 \pm 27$
$A_{217}^{\text{CIB}}$	66.2	$63.6 \pm 6.6$	$\Omega_m h^2$	0.14189	$0.1417 \pm 0.0011$	$k_{\text{eq}}$	0.010301	$0.010291 \pm 0.000082$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m h^3$	0.095984	$0.09596 \pm 0.00030$	$100\theta_{\text{eq}}$	0.8179	$0.8186 \pm 0.0051$
$A_{143}^{\text{tSZ}}$	7.20	$5.4 \pm 1.9$	$\sigma_8$	0.8299	$0.830 \pm 0.013$	$100\theta_{\text{s,eq}}$	0.45186	$0.4522 \pm 0.0026$
$A_{100}^{\text{PS}}$	254.7	$259 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4621	$0.4617 \pm 0.0091$	$r_{\text{drag}}/D_V(0.57)$	0.071665	$0.07172 \pm 0.00041$
$A_{143}^{\text{PS}}$	39.8	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6193	$0.619 \pm 0.011$	$H(0.57)$	93.008	$93.03 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0090	$1.009 \pm 0.017$	$D_A(0.57)$	1387.2	$1386.5 \pm 6.9$
$A_{217}^{\text{PS}}$	98.7	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4941	$2.494 \pm 0.040$	$F_{\text{AP}}(0.57)$	0.67566	$0.6755 \pm 0.0018$
$A^{\text{kSZ}}$	0.00	$< 3.96$	$z_{\text{re}}$	10.19	$10.1^{+1.6}_{-1.4}$	$f\sigma_8(0.57)$	0.4821	$0.4821 \pm 0.0080$
$A_{100}^{\text{dust}TT}$	7.45	$7.4 \pm 1.9$	$10^9 A_s$	2.205	$2.205 \pm 0.073$	$\sigma_8(0.57)$	0.6177	$0.618 \pm 0.010$
$A_{143}^{\text{dust}TT}$	9.00	$8.9 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8770	$1.876 \pm 0.012$	$f_{2000}^{143}$	29.06	$29.2 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.65	$17.0 \pm 4.2$	$D_{40}$	1240.9	$1246 \pm 15$	$f_{2000}^{143 \times 217}$	32.03	$32.0 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.1	$81.7 \pm 7.4$	$D_{220}$	5725.2	$5726 \pm 39$	$f_{2000}^{217}$	105.67	$105.7 \pm 1.9$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0809 \pm 0.0057$	$D_{810}$	2534.2	$2534 \pm 13$	$\chi_{\text{lowTEB}}^2$	10497.61	$10499.2 \pm 2.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04883	$0.0484 \pm 0.0050$	$D_{1420}$	815.28	$815.4 \pm 4.7$	$\chi_{\text{plik}}^2$	2431.0	$2450.3 \pm 7.1$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.100 \pm 0.032$	$D_{2000}$	230.69	$230.7 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0217	$0.050 \pm 0.068$
$A_{143}^{\text{dust}EE}$	0.1002	$0.0997 \pm 0.0069$	$n_{\text{s},0.002}$	0.9680	$0.9688^{+0.0055}_{-0.0049}$	$\chi_{\text{MGS}}^2$	1.28	$1.42 \pm 0.52$
$A_{143 \times 217}^{\text{dust}EE}$	0.2232	$0.224 \pm 0.046$	$Y_{\text{P}}$	0.245350	$0.245339 \pm 0.000068$	$\chi_{\text{DR11CMass}}^2$	2.446	$2.82 \pm 0.60$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246676	$0.246665 \pm 0.000069$	$\chi_{\text{DR11LOWZ}}^2$	0.607	$0.66 \pm 0.54$
$A_{100}^{\text{dust}TE}$	0.1415	$0.140 \pm 0.038$	$10^5 D/H$	2.6097	$2.614 \pm 0.028$	$\chi_{\text{prior}}^2$	6.9	$19.1 \pm 5.4$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	Age/Gyr	13.8018	$13.801 \pm 0.022$	$\chi_{\text{CMB}}^2$	12928.6	$12949.5 \pm 6.9$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.304 \pm 0.085$	$z_*$	1089.952	$1089.97 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.354	$4.94 \pm 0.88$

Best-fit  $\chi_{\text{eff}}^2 = 12939.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.09$ ;  $R - 1 = 0.00883$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.28 ( $\Delta$  0.06) DR11CMass: 2.45 ( $\Delta$  -0.05) DR11LOWZ: 0.61 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10497.61 ( $\Delta$  0.19) plik.dx11dr2\_HM.v18.TTTEEE: 2430.98 ( $\Delta$  -0.55)

## 6.10 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022274	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.303 \pm 0.085$	Age/Gyr	13.8049	$13.802 \pm 0.028$
$\Omega_c h^2$	0.11924	$0.1189 \pm 0.0017$	$A_{143}^{\text{dustTE}}$	0.154	$0.155 \pm 0.054$	$z_*$	1089.975	$1089.97 \pm 0.29$
$100\theta_{\text{MC}}$	1.040887	$1.04101^{+0.00050}_{-0.00042}$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.338 \pm 0.080$	$r_*$	144.702	$144.80^{+0.45}_{-0.41}$
$\tau$	0.0820	$0.081 \pm 0.017$	$A_{217}^{\text{dustTE}}$	1.668	$1.67 \pm 0.25$	$100\theta_*$	1.041083	$1.04121^{+0.00050}_{-0.00042}$
$\alpha_{-1}$	0.00004	$0.00037^{+0.00042}_{-0.00064}$	$c_{100}$	0.99819	$0.99814 \pm 0.00076$	$D_A/\text{Gpc}$	13.8992	$13.907 \pm 0.037$
$\ln(10^{10} A_s)$	3.0975	$3.093 \pm 0.033$	$c_{217}$	0.99594	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.666	$1059.59 \pm 0.34$
$n_s$	0.9676	$0.9684^{+0.0076}_{-0.0062}$	$H_0$	67.53	$67.68 \pm 0.77$	$r_{\text{drag}}$	147.400	$147.51^{+0.46}_{-0.41}$
$y_{\text{cal}}$	1.00039	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6883	$0.690^{+0.012}_{-0.010}$	$k_D$	0.140468	$0.14034^{+0.00043}_{-0.00051}$
$A_{217}^{\text{CIB}}$	65.2	$63.6 \pm 6.6$	$\Omega_m$	0.3117	$0.310^{+0.010}_{-0.012}$	$100\theta_D$	0.160910	$0.16097 \pm 0.00021$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.25	—	$\Omega_m h^2$	0.14216	$0.1418 \pm 0.0017$	$z_{\text{eq}}$	3381.7	$3374 \pm 40$
$A_{143}^{\text{tSZ}}$	7.11	$5.4 \pm 1.9$	$\Omega_m h^3$	0.096001	$0.09597 \pm 0.00031$	$k_{\text{eq}}$	0.010321	$0.01030 \pm 0.00012$
$A_{100}^{\text{PS}}$	252.4	$259 \pm 27$	$\sigma_8$	0.8322	$0.830 \pm 0.013$	$100\theta_{\text{eq}}$	0.8167	$0.8183 \pm 0.0076$
$A_{143}^{\text{PS}}$	41.2	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.462 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45122	$0.4521 \pm 0.0040$
$A_{143 \times 217}^{\text{PS}}$	39.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.619 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.07170 \pm 0.00061$
$A_{217}^{\text{PS}}$	100.0	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0127	$1.009 \pm 0.017$	$H(0.57)$	92.965	$93.02 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 3.98$	$\langle d^2 \rangle^{1/2}$	2.5018	$2.495 \pm 0.042$	$D_A(0.57)$	1388.7	$1387 \pm 10$
$A_{100}^{\text{dustTT}}$	7.46	$7.4 \pm 1.9$	$z_{\text{re}}$	10.33	$10.1^{+1.6}_{-1.4}$	$F_{\text{AP}}(0.57)$	0.67608	$0.6756 \pm 0.0027$
$A_{143}^{\text{dustTT}}$	8.94	$8.9 \pm 1.8$	$10^9 A_s$	2.214	$2.207 \pm 0.074$	$f\sigma_8(0.57)$	0.4839	$0.4823 \pm 0.0083$
$A_{143 \times 217}^{\text{dustTT}}$	17.72	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8791	$1.877 \pm 0.014$	$\sigma_8(0.57)$	0.6190	$0.618 \pm 0.010$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.4$	$D_{40}$	1240.8	$1245 \pm 15$	$f_{2000}^{143}$	28.61	$29.2 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0812	$0.0810 \pm 0.0057$	$D_{220}$	5724.9	$5727 \pm 39$	$f_{2000}^{143 \times 217}$	31.75	$32.0 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04865	$0.0485 \pm 0.0050$	$D_{810}$	2535.6	$2534 \pm 14$	$f_{2000}^{217}$	105.33	$105.7 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0994	$0.100 \pm 0.032$	$D_{1420}$	815.73	$815.4 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.60	$10499.1 \pm 3.0$
$A_{143}^{\text{dustEE}}$	0.09999	$0.0998 \pm 0.0069$	$D_{2000}$	230.89	$230.7 \pm 1.6$	$\chi_{\text{plik}}^2$	2430.9	$2450.9 \pm 7.2$
$A_{143 \times 217}^{\text{dustEE}}$	0.2226	$0.224 \pm 0.047$	$n_{\text{s},0.002}$	0.9676	$0.9684^{+0.0076}_{-0.0062}$	$\chi_{\text{JLA}}^2$	706.755	$706.79 \pm 0.32$
$A_{217}^{\text{dustEE}}$	0.648	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.245350	$0.245341 \pm 0.000071$	$\chi_{\text{prior}}^2$	6.9	$19.2 \pm 5.4$
$A_{100}^{\text{dustTE}}$	0.1427	$0.140 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.246677	$0.246667 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12928.5	$12950.0 \pm 7.0$
$A_{100 \times 143}^{\text{dustTE}}$	0.1310	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6095	$2.613 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.15$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.35$ ;  $R - 1 = 0.00918$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.60 ( $\Delta$  0.24) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.94 ( $\Delta$  -0.68) SN - JLA December\_2013: 706.75 ( $\Delta$  -0.10)

## 6.11 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022256	$0.02224 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.301 \pm 0.086$	Age/Gyr	13.8003	$13.795 \pm 0.028$
$\Omega_c h^2$	0.11875	$0.1183 \pm 0.0017$	$A_{143}^{\text{dustTE}}$	0.155	$0.155 \pm 0.054$	$z_*$	1089.953	$1089.93 \pm 0.30$
$100\theta_{\text{MC}}$	1.041032	$1.04117^{+0.00046}_{-0.00040}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.337 \pm 0.080$	$r_*$	144.843	$144.98^{+0.42}_{-0.37}$
$\tau$	0.0644	$0.066 \pm 0.014$	$A_{217}^{\text{dustTE}}$	1.666	$1.66 \pm 0.25$	$100\theta_*$	1.041229	$1.04137^{+0.00045}_{-0.00040}$
$\alpha_{-1}$	0.00011	$0.00058^{+0.00037}_{-0.00075}$	$c_{100}$	0.99817	$0.99811 \pm 0.00077$	$D_A/\text{Gpc}$	13.9108	$13.922 \pm 0.035$
$\ln(10^{10} A_s)$	3.0598	$3.062 \pm 0.025$	$c_{217}$	0.99612	$0.9961 \pm 0.0015$	$z_{\text{drag}}$	1059.589	$1059.51 \pm 0.33$
$n_s$	0.9681	$0.9703^{+0.0069}_{-0.0060}$	$H_0$	67.74	$67.95 \pm 0.75$	$r_{\text{drag}}$	147.550	$147.70^{+0.43}_{-0.36}$
$y_{\text{cal}}$	1.00010	$1.0002 \pm 0.0025$	$\Omega_\Lambda$	0.6913	$0.694^{+0.011}_{-0.0097}$	$k_D$	0.140296	$0.14013^{+0.00039}_{-0.00046}$
$A_{217}^{\text{CIB}}$	67.8	$64.3 \pm 6.6$	$\Omega_m$	0.3087	$0.3059^{+0.0097}_{-0.011}$	$100\theta_D$	0.160973	$0.16103 \pm 0.00020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14165	$0.1411 \pm 0.0016$	$z_{\text{eq}}$	3369.5	$3358 \pm 38$
$A_{143}^{\text{tSZ}}$	7.30	$5.4 \pm 1.9$	$\Omega_m h^3$	0.095950	$0.09590 \pm 0.00030$	$k_{\text{eq}}$	0.010284	$0.01025 \pm 0.00012$
$A_{100}^{\text{PS}}$	257.3	$260 \pm 27$	$\sigma_8$	0.8157	$0.8162 \pm 0.0088$	$100\theta_{\text{eq}}$	0.8189	$0.8213 \pm 0.0073$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4532	$0.4513^{+0.0072}_{-0.0082}$	$100\theta_{s,\text{eq}}$	0.45242	$0.4536 \pm 0.0038$
$A_{143 \times 217}^{\text{PS}}$	33.4	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.6069 \pm 0.0069$	$r_{\text{drag}}/D_V(0.57)$	0.07175	$0.07194 \pm 0.00059$
$A_{217}^{\text{PS}}$	96.7	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9911	$0.990 \pm 0.010$	$H(0.57)$	93.037	$93.12 \pm 0.32$
$A^{\text{kSZ}}$	0.00	$< 4.31$	$\langle d^2 \rangle^{1/2}$	2.4511	$2.448 \pm 0.025$	$D_A(0.57)$	1386.0	$1383 \pm 10$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$z_{\text{re}}$	8.69	$8.8^{+1.4}_{-1.2}$	$F_{\text{AP}}(0.57)$	0.67532	$0.6746 \pm 0.0026$
$A_{143}^{\text{dustTT}}$	9.02	$9.0 \pm 1.8$	$10^9 A_s$	2.132	$2.137 \pm 0.054$	$f\sigma_8(0.57)$	0.47355	$0.4730 \pm 0.0050$
$A_{143 \times 217}^{\text{dustTT}}$	17.63	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8746	$1.872 \pm 0.013$	$\sigma_8(0.57)$	0.6075	$0.6086 \pm 0.0077$
$A_{217}^{\text{dustTT}}$	81.8	$81.8 \pm 7.3$	$D_{40}$	1235.3	$1239 \pm 14$	$f_{2000}^{143}$	29.74	$29.8 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0812	$0.0809 \pm 0.0056$	$D_{220}$	5722.8	$5721 \pm 39$	$f_{2000}^{143 \times 217}$	32.54	$32.5 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04851	$0.0485 \pm 0.0050$	$D_{810}$	2533.1	$2532 \pm 13$	$f_{2000}^{217}$	106.06	$106.0 \pm 1.8$
$A_{100 \times 217}^{\text{dustEE}}$	0.0988	$0.100 \pm 0.032$	$D_{1420}$	815.12	$815.4 \pm 4.8$	$\chi_{\text{lensing}}^2$	9.60	$10.1 \pm 1.7$
$A_{143}^{\text{dustEE}}$	0.0998	$0.0998 \pm 0.0069$	$D_{2000}$	230.26	$230.4 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10496.31	$10497.8 \pm 2.1$
$A_{143 \times 217}^{\text{dustEE}}$	0.2229	$0.225 \pm 0.046$	$n_{s,0.002}$	0.9681	$0.9703^{+0.0069}_{-0.0060}$	$\chi_{\text{plik}}^2$	2433.6	$2453.2 \pm 7.0$
$A_{217}^{\text{dustEE}}$	0.650	$0.66 \pm 0.13$	$Y_P$	0.245343	$0.245334^{+0.000080}_{-0.000071}$	$\chi_{\text{prior}}^2$	7.1	$19.2 \pm 5.4$
$A_{100}^{\text{dustTE}}$	0.1394	$0.140 \pm 0.037$	$Y_P^{\text{BBN}}$	0.246669	$0.246660^{+0.000081}_{-0.000071}$	$\chi_{\text{CMB}}^2$	12939.6	$12961.0 \pm 6.9$
$A_{100 \times 143}^{\text{dustTE}}$	0.1311	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6128	$2.616 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.63$ ;  $\Delta\chi_{\text{eff}}^2 = -0.55$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.02079$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.60 ( $\Delta$  -0.17) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.31 ( $\Delta$  1.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.65 ( $\Delta$  -1.26)



## 6.12 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022297	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.085$	Age/Gyr	13.8008	$13.800 \pm 0.028$
$\Omega_c h^2$	0.11906	$0.1188 \pm 0.0018$	$A_{143}^{\text{dustTE}}$	0.155	$0.155 \pm 0.054$	$z_*$	1089.930	$1089.95 \pm 0.30$
$100\theta_{\text{MC}}$	1.040925	$1.04103^{+0.00050}_{-0.00042}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.337 \pm 0.080$	$r_*$	144.730	$144.82^{+0.47}_{-0.41}$
$\tau$	0.0838	$0.081 \pm 0.017$	$A_{217}^{\text{dustTE}}$	1.675	$1.67 \pm 0.25$	$100\theta_*$	1.041117	$1.04123^{+0.00050}_{-0.00042}$
$\alpha_{-1}$	0.00004	$0.00039^{+0.00042}_{-0.00066}$	$c_{100}$	0.99821	$0.99815 \pm 0.00076$	$D_A/\text{Gpc}$	13.9015	$13.909^{+0.040}_{-0.037}$
$\ln(10^{10} A_s)$	3.1010	$3.094 \pm 0.033$	$c_{217}$	0.99582	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.704	$1059.60 \pm 0.33$
$n_s$	0.9684	$0.9687^{+0.0077}_{-0.0062}$	$H_0$	67.62	$67.72 \pm 0.79$	$r_{\text{drag}}$	147.422	$147.53^{+0.48}_{-0.41}$
$y_{\text{cal}}$	1.00036	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6895	$0.691^{+0.012}_{-0.010}$	$k_D$	0.140462	$0.14033^{+0.00044}_{-0.00052}$
$A_{217}^{\text{CIB}}$	63.1	$63.6 \pm 6.6$	$\Omega_m$	0.3105	$0.309^{+0.010}_{-0.012}$	$100\theta_D$	0.160891	$0.16096 \pm 0.00021$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.52	—	$\Omega_m h^2$	0.14200	$0.1417^{+0.0017}_{-0.0019}$	$z_{\text{eq}}$	3378.0	$3371^{+40}_{-44}$
$A_{143}^{\text{tSZ}}$	6.80	$5.4 \pm 1.9$	$\Omega_m h^3$	0.096029	$0.09597 \pm 0.00031$	$k_{\text{eq}}$	0.010310	$0.01029^{+0.00012}_{-0.00014}$
$A_{100}^{\text{PS}}$	251.3	$258 \pm 27$	$\sigma_8$	0.8332	$0.830 \pm 0.013$	$100\theta_{\text{eq}}$	0.8174	$0.8187 \pm 0.0078$
$A_{143}^{\text{PS}}$	45.9	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4643	$0.462 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45160	$0.4523 \pm 0.0040$
$A_{143 \times 217}^{\text{PS}}$	47.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.619 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07163	$0.07173 \pm 0.00063$
$A_{217}^{\text{PS}}$	103.9	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0132	$1.009 \pm 0.017$	$H(0.57)$	93.009	$93.04 \pm 0.33$
$A^{\text{kSZ}}$	0.00	$< 3.97$	$\langle d^2 \rangle^{1/2}$	2.5028	$2.494 \pm 0.042$	$D_A(0.57)$	1387.4	$1386 \pm 10$
$A_{100}^{\text{dustTT}}$	7.34	$7.4 \pm 1.9$	$z_{\text{re}}$	10.48	$10.2^{+1.6}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67578	$0.6754^{+0.0027}_{-0.0030}$
$A_{143}^{\text{dustTT}}$	8.93	$8.9 \pm 1.8$	$10^9 A_s$	2.222	$2.208 \pm 0.074$	$f\sigma_8(0.57)$	0.4842	$0.4821 \pm 0.0083$
$A_{143 \times 217}^{\text{dustTT}}$	18.08	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8790	$1.876 \pm 0.014$	$\sigma_8(0.57)$	0.6201	$0.618 \pm 0.010$
$A_{217}^{\text{dustTT}}$	82.6	$81.8 \pm 7.4$	$D_{40}$	1240.7	$1245 \pm 15$	$f_{2000}^{143}$	28.31	$29.2 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0810 \pm 0.0057$	$D_{220}$	5727.3	$5727 \pm 39$	$f_{2000}^{143 \times 217}$	31.60	$31.9 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04877	$0.0485 \pm 0.0050$	$D_{810}$	2536.5	$2534 \pm 14$	$f_{2000}^{217}$	105.07	$105.6 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0989	$0.100 \pm 0.032$	$D_{1420}$	816.31	$815.4 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.75	$10499.2 \pm 3.1$
$A_{143}^{\text{dustEE}}$	0.1003	$0.0998 \pm 0.0069$	$D_{2000}$	231.15	$230.8 \pm 1.6$	$\chi_{\text{plik}}^2$	2431.2	$2450.9 \pm 7.3$
$A_{143 \times 217}^{\text{dustEE}}$	0.2236	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9684	$0.9687^{+0.0077}_{-0.0062}$	$\chi_{\text{H070p6}}^2$	0.800	$0.80 \pm 0.41$
$A_{217}^{\text{dustEE}}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245361	$0.245343 \pm 0.000072$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.4$
$A_{100}^{\text{dustTE}}$	0.1404	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246687	$0.246670 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12928.9	$12950.1 \pm 7.0$
$A_{100 \times 143}^{\text{dustTE}}$	0.1317	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.6052	$2.612 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.21$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.33$ ;  $R - 1 = 0.00953$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.75 ( $\Delta$  0.75) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.15 ( $\Delta$  -0.61) Hubble - H070p6: 0.80 ( $\Delta$  -0.10)

### 6.13 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022267	$0.02224 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.338 \pm 0.079$	$D_A/\text{Gpc}$	13.9175	$13.922 \pm 0.025$
$\Omega_c h^2$	0.11841	$0.1183 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.663	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.589	$1059.51 \pm 0.33$
$100\theta_{\text{MC}}$	1.041091	$1.04118^{+0.00039}_{-0.00034}$	$c_{100}$	0.99814	$0.99811 \pm 0.00077$	$r_{\text{drag}}$	147.627	$147.70 \pm 0.29$
$\tau$	0.0660	$0.066 \pm 0.012$	$c_{217}$	0.99609	$0.9961 \pm 0.0015$	$k_D$	0.140224	$0.14013 \pm 0.00035$
$\alpha_{-1}$	0.00014	$0.00057^{+0.00032}_{-0.00068}$	$H_0$	67.885	$67.95 \pm 0.49$	$100\theta_D$	0.160978	$0.16103 \pm 0.00020$
$\ln(10^{10} A_s)$	3.0620	$3.061 \pm 0.023$	$\Omega_\Lambda$	0.6933	$0.6942^{+0.0071}_{-0.0063}$	$z_{\text{eq}}$	3361.8	$3357 \pm 25$
$n_s$	0.96904	$0.9704 \pm 0.0048$	$\Omega_m$	0.3067	$0.3058^{+0.0063}_{-0.0071}$	$k_{\text{eq}}$	0.010261	$0.010247 \pm 0.000077$
$y_{\text{cal}}$	1.00006	$1.0002 \pm 0.0025$	$\Omega_m h^2$	0.14133	$0.1411 \pm 0.0011$	$100\theta_{\text{eq}}$	0.82042	$0.8213 \pm 0.0048$
$A_{217}^{\text{CIB}}$	67.7	$64.3 \pm 6.5$	$\Omega_m h^3$	0.095939	$0.09590 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45318	$0.4536^{+0.0027}_{-0.0024}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\sigma_8$	0.8159	$0.8163 \pm 0.0085$	$r_{\text{drag}}/D_V(0.57)$	0.071866	$0.07194 \pm 0.00038$
$A_{143}^{\text{tSZ}}$	7.30	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.4513 \pm 0.0060$	$H(0.57)$	93.094	$93.11 \pm 0.22$
$A_{100}^{\text{PS}}$	257.3	$260 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.6070 \pm 0.0065$	$D_A(0.57)$	1384.1	$1383.3 \pm 6.6$
$A_{143}^{\text{PS}}$	38.8	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9902	$0.990 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67480	$0.6746 \pm 0.0017$
$A_{143 \times 217}^{\text{PS}}$	33.3	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4491	$2.448 \pm 0.025$	$f\sigma_8(0.57)$	0.47313	$0.4731 \pm 0.0049$
$A_{217}^{\text{PS}}$	96.7	$97 \pm 10$	$z_{\text{re}}$	8.84	$8.8^{+1.2}_{-1.0}$	$\sigma_8(0.57)$	0.6081	$0.6087 \pm 0.0068$
$A^{\text{kSZ}}$	0.00	$< 4.24$	$10^9 A_s$	2.1371	$2.136 \pm 0.049$	$f_{2000}^{143}$	29.69	$29.9 \pm 2.6$
$A_{100}^{\text{dust}TT}$	7.41	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8727	$1.872 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.51	$32.5 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.05	$9.0 \pm 1.8$	$D_{40}$	1234.8	$1240 \pm 14$	$f_{2000}^{217}$	106.02	$106.0 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.65	$17.2 \pm 4.1$	$D_{220}$	5722.4	$5721 \pm 39$	$\chi_{\text{lensing}}^2$	9.45	$10.1 \pm 1.6$
$A_{217}^{\text{dust}TT}$	81.9	$81.8 \pm 7.3$	$D_{810}$	2532.2	$2532 \pm 13$	$\chi_{\text{lowTEB}}^2$	10496.37	$10497.7 \pm 2.0$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0809 \pm 0.0056$	$D_{1420}$	815.07	$815.4 \pm 4.7$	$\chi_{\text{plik}}^2$	2433.7	$2452.6 \pm 6.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04861	$0.0484 \pm 0.0049$	$D_{2000}$	230.29	$230.4 \pm 1.6$	$\chi_{\text{H070p6}}^2$	0.669	$0.66 \pm 0.23$
$A_{100 \times 217}^{\text{dust}EE}$	0.1000	$0.0999 \pm 0.032$	$n_{s,0.002}$	0.96904	$0.9704 \pm 0.0048$	$\chi_{\text{JLA}}^2$	706.627	$706.64 \pm 0.14$
$A_{143}^{\text{dust}EE}$	0.0999	$0.0998 \pm 0.0069$	$Y_P$	0.245348	$0.245334^{+0.000074}_{-0.000067}$	$\chi_{6\text{DF}}^2$	0.0030	$0.032 \pm 0.046$
$A_{143 \times 217}^{\text{dust}EE}$	0.2227	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.246674	$0.246660^{+0.000074}_{-0.000067}$	$\chi_{\text{MGS}}^2$	1.54	$1.69 \pm 0.53$
$A_{217}^{\text{dust}EE}$	0.657	$0.66 \pm 0.13$	$10^5 D/H$	2.6107	$2.616 \pm 0.028$	$\chi_{\text{DR11CMAS}}^2$	2.411	$2.79 \pm 0.55$
$A_{100}^{\text{dust}TE}$	0.1421	$0.141 \pm 0.037$	$\text{Age/Gyr}$	13.7960	$13.795 \pm 0.022$	$\chi_{\text{DR11LOWZ}}^2$	0.369	$0.41 \pm 0.40$
$A_{100 \times 143}^{\text{dust}TE}$	0.1313	$0.131 \pm 0.029$	$z_*$	1089.909	$1089.93 \pm 0.23$	$\chi_{\text{prior}}^2$	7.1	$19.2 \pm 5.4$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.301 \pm 0.085$	$r_*$	144.921	$144.98 \pm 0.27$	$\chi_{\text{CMB}}^2$	12939.5	$12960.4 \pm 6.8$
$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$100\theta_*$	1.041286	$1.04138^{+0.00039}_{-0.00034}$	$\chi_{\text{BAO}}^2$	4.323	$4.93 \pm 0.83$

Best-fit  $\chi_{\text{eff}}^2 = 13658.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.77$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.81$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.02241$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMAS: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.37 ( $\Delta$  -0.11) CMB - smica\_g30\_ftl\_full\_pp: 9.45 ( $\Delta$  -0.30) lowl\_SMW\_70\_dx11d\_2014\_10\_03

10496.37 ( $\Delta$  1.15) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.73 ( $\Delta$  -1.47) Hubble - H070p6: 0.67 ( $\Delta$  -0.05) SN - JLA December\_2013: 706.63 ( $\Delta$  -0.03)

#### 6.14 base\_alpha1\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02225 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	$0.303 \pm 0.085$	Age/Gyr	$13.805 \pm 0.029$
$\Omega_c h^2$	$0.1192 \pm 0.0018$	$A_{143}^{\text{dustTE}}$	$0.155 \pm 0.054$	$z_*$	$1090.00 \pm 0.30$
$100\theta_{\text{MC}}$	$1.04096^{+0.00052}_{-0.00043}$	$A_{143 \times 217}^{\text{dustTE}}$	$0.338 \pm 0.080$	$r_*$	$144.74^{+0.48}_{-0.43}$
$\tau$	$0.080 \pm 0.016$	$A_{217}^{\text{dustTE}}$	$1.67 \pm 0.25$	$100\theta_*$	$1.04116^{+0.00052}_{-0.00043}$
$\alpha_{-1}$	$0.00032^{+0.00044}_{-0.00063}$	$c_{100}$	$0.99815 \pm 0.00076$	$D_A/\text{Gpc}$	$13.902 \pm 0.039$
$\ln(10^{10} A_s)$	$3.094 \pm 0.032$	$c_{217}$	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	$1059.59 \pm 0.33$
$n_s$	$0.9675^{+0.0080}_{-0.0066}$	$H_0$	$67.56 \pm 0.82$	$r_{\text{drag}}$	$147.45^{+0.49}_{-0.43}$
$y_{\text{cal}}$	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	$0.689^{+0.012}_{-0.011}$	$k_D$	$0.14040^{+0.00046}_{-0.00053}$
$A_{217}^{\text{CIB}}$	$63.6 \pm 6.6$	$\Omega_m$	$0.311^{+0.011}_{-0.012}$	$100\theta_D$	$0.16096 \pm 0.00021$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1421 \pm 0.0018$	$z_{\text{eq}}$	$3380 \pm 42$
$A_{143}^{\text{tSZ}}$	$5.4 \pm 1.9$	$\Omega_m h^3$	$0.09597 \pm 0.00031$	$k_{\text{eq}}$	$0.01031 \pm 0.00013$
$A_{100}^{\text{PS}}$	$259 \pm 27$	$\sigma_8$	$0.831 \pm 0.013$	$100\theta_{\text{eq}}$	$0.8171 \pm 0.0080$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.464 \pm 0.011$	$100\theta_{s,\text{eq}}$	$0.4515 \pm 0.0042$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.621 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	$0.07161 \pm 0.00065$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$\sigma_8/h^{0.5}$	$1.011 \pm 0.017$	$H(0.57)$	$92.98 \pm 0.33$
$A^{\text{kSZ}}$	$< 3.99$	$\langle d^2 \rangle^{1/2}$	$2.499 \pm 0.041$	$D_A(0.57)$	$1388 \pm 11$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$z_{\text{re}}$	$10.1 \pm 1.5$	$F_{\text{AP}}(0.57)$	$0.6760^{+0.0028}_{-0.0031}$
$A_{143}^{\text{dustTT}}$	$8.9 \pm 1.8$	$10^9 A_s$	$2.207^{+0.069}_{-0.078}$	$f\sigma_8(0.57)$	$0.4830 \pm 0.0081$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.014$	$\sigma_8(0.57)$	$0.6182^{+0.0096}_{-0.011}$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.4$	$D_{40}$	$1245 \pm 15$	$f_{2000}^{143}$	$29.3 \pm 2.7$
$A_{100}^{\text{dustEE}}$	$0.0810 \pm 0.0057$	$D_{220}$	$5727 \pm 39$	$f_{2000}^{143 \times 217}$	$32.0 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	$0.0485 \pm 0.0050$	$D_{810}$	$2535 \pm 14$	$f_{2000}^{217}$	$105.7 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	$0.100 \pm 0.032$	$D_{1420}$	$815.2 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	$10499.0 \pm 3.0$
$A_{143}^{\text{dustEE}}$	$0.0998 \pm 0.0069$	$D_{2000}$	$230.6 \pm 1.6$	$\chi_{\text{plik}}^2$	$2451.1 \pm 7.3$
$A_{143 \times 217}^{\text{dustEE}}$	$0.224 \pm 0.046$	$n_{s,0.002}$	$0.9675^{+0.0080}_{-0.0066}$	$\chi_{\text{prior}}^2$	$19.2 \pm 5.4$
$A_{217}^{\text{dustEE}}$	$0.65 \pm 0.13$	$Y_P$	$0.245337 \pm 0.000072$	$\chi_{\text{CMB}}^2$	$12950.0 \pm 6.9$
$A_{100}^{\text{dustTE}}$	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246663 \pm 0.000072$		
$A_{100 \times 143}^{\text{dustTE}}$	$0.131 \pm 0.029$	$10^5 \text{D/H}$	$2.615 \pm 0.030$		

$\bar{\chi}_{\text{eff}}^2 = 12969.17$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.49$ ;  $R - 1 = 0.00901$

## 7 mnu

### 7.1 base\_mnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022264	$0.02213 \pm 0.00027$	$\Omega_m$	0.3071	$0.339^{+0.017}_{-0.044}$	$100\theta_*$	1.041067	$1.04096 \pm 0.00049$
$\Omega_c h^2$	0.11950	$0.1202 \pm 0.0024$	$\Omega_m h^2$	0.14176	$0.1449^{+0.0025}_{-0.0044}$	$D_A/\text{Gpc}$	13.8943	$13.881 \pm 0.049$
$100\theta_{\text{MC}}$	1.04090	$1.04068 \pm 0.00054$	$\Omega_\nu h^2$	0.00000	$< 0.00286$	$z_{\text{drag}}$	1059.666	$1059.43 \pm 0.51$
$\tau$	0.0789	$0.080 \pm 0.020$	$\Omega_m h^3$	0.09632	$0.0949^{+0.0019}_{-0.00070}$	$r_{\text{drag}}$	147.35	$147.24 \pm 0.52$
$\Sigma m_\nu [\text{eV}]$	0.000	$< 0.266$	$\sigma_8$	0.8430	$0.796^{+0.057}_{-0.023}$	$k_D$	0.14051	$0.14056 \pm 0.00054$
$\ln(10^{10} A_s)$	3.0913	$3.095 \pm 0.038$	$\sigma_8 \Omega_m^{0.5}$	0.4672	$0.462 \pm 0.014$	$100\theta_D$	0.160919	$0.16102 \pm 0.00028$
$n_s$	0.9666	$0.9637 \pm 0.0071$	$\sigma_8 \Omega_m^{0.25}$	0.6276	$0.606^{+0.029}_{-0.016}$	$z_{\text{eq}}$	3388	$3402 \pm 53$
$y_{\text{cal}}$	1.00035	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0227	$0.983^{+0.051}_{-0.026}$	$k_{\text{eq}}$	0.010339	$0.01039 \pm 0.00016$
$A_{217}^{\text{CIB}}$	66.4	$64.3 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.5048	$2.498 \pm 0.048$	$100\theta_{\text{eq}}$	0.8155	$0.8129 \pm 0.0099$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$z_{\text{re}}$	10.04	$10.2^{+2.0}_{-1.7}$	$100\theta_{\text{s,eq}}$	0.4506	$0.4493 \pm 0.0051$
$A_{143}^{\text{tSZ}}$	7.13	$5.0 \pm 1.9$	$10^9 A_s$	2.201	$2.211 \pm 0.085$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.0703^{+0.0020}_{-0.0010}$
$A_{100}^{\text{PS}}$	251.4	$260 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8794	$1.881 \pm 0.014$	$H(0.57)$	93.21	$92.0^{+1.5}_{-0.67}$
$A_{143}^{\text{PS}}$	39.4	$45 \pm 8$	$D_{40}$	1234.9	$1238 \pm 15$	$D_A(0.57)$	1382.7	$1417^{+18}_{-45}$
$A_{143 \times 217}^{\text{PS}}$	34.4	$40^{+10}_{-10}$	$D_{220}$	5716.4	$5715 \pm 41$	$F_{\text{AP}}(0.57)$	0.6749	$0.6827^{+0.0043}_{-0.010}$
$A_{217}^{\text{PS}}$	98.0	$97 \pm 10$	$D_{810}$	2533.8	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4879	$0.471^{+0.023}_{-0.011}$
$A^{\text{kSZ}}$	0.00	$< 4.85$	$D_{1420}$	814.8	$814.1 \pm 5.1$	$\sigma_8(0.57)$	0.6278	$0.588^{+0.049}_{-0.019}$
$A_{100}^{\text{dustTT}}$	7.46	$7.4 \pm 1.9$	$D_{2000}$	230.63	$229.8 \pm 2.0$	$f_{2000}^{143}$	29.28	$30.7 \pm 3.2$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9666	$0.9637 \pm 0.0071$	$f_{2000}^{143 \times 217}$	32.00	$33.0 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	17.75	$17.2 \pm 4.1$	$Y_{\text{P}}$	0.245346	$0.24528 \pm 0.00012$	$f_{2000}^{217}$	105.63	$106.6 \pm 2.2$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246672	$0.24661 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10496.52	$10497.7 \pm 2.6$
$c_{100}$	0.99788	$0.99787 \pm 0.00078$	$10^5 D/H$	2.611	$2.637^{+0.048}_{-0.056}$	$\chi_{\text{plik}}^2$	762.9	$778.5 \pm 6.0$
$c_{217}$	0.99588	$0.9960 \pm 0.0015$	$\text{Age/Gyr}$	13.778	$13.911^{+0.063}_{-0.17}$	$\chi_{\text{prior}}^2$	2.09	$7.4 \pm 3.6$
$H_0$	67.95	$65.6^{+3.1}_{-1.4}$	$z_*$	1090.01	$1090.29^{+0.49}_{-0.59}$	$\chi_{\text{CMB}}^2$	11259.5	$11276.2 \pm 5.9$
$\Omega_\Lambda$	0.6929	$0.661^{+0.044}_{-0.017}$	$r_*$	144.65	$144.50 \pm 0.54$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.54$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.82$ ;  $R - 1 = 0.00693$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.52 ( $\Delta$  0.05) plik\_dx11dr2\_HM\_v18\_TT: 762.93 ( $\Delta$  -0.44)

## 7.2 base\_mnu\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022299	$0.02224 \pm 0.00023$	$\Omega_m$	0.3045	$0.318^{+0.014}_{-0.021}$	$100\theta_*$	1.041147	$1.04110 \pm 0.00046$
$\Omega_c h^2$	0.11909	$0.1192 \pm 0.0021$	$\Omega_m h^2$	0.14140	$0.1427^{+0.0021}_{-0.0024}$	$D_A/\text{Gpc}$	13.9009	$13.900 \pm 0.043$
$100\theta_{\text{MC}}$	1.040992	$1.04088 \pm 0.00048$	$\Omega_\nu h^2$	0.00002	$< 0.00148$	$z_{\text{drag}}$	1059.704	$1059.59 \pm 0.47$
$\tau$	0.0797	$0.081 \pm 0.020$	$\Omega_m h^3$	0.09636	$0.09570^{+0.00094}_{-0.00055}$	$r_{\text{drag}}$	147.419	$147.43 \pm 0.46$
$\Sigma m_\nu [\text{eV}]$	0.001	$< 0.137$	$\sigma_8$	0.8420	$0.819^{+0.030}_{-0.019}$	$k_D$	0.14046	$0.14042 \pm 0.00051$
$\ln(10^{10} A_s)$	3.0921	$3.095 \pm 0.039$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.461 \pm 0.013$	$100\theta_D$	0.160898	$0.16095 \pm 0.00027$
$n_s$	0.9673	$0.9666 \pm 0.0060$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.615^{+0.018}_{-0.015}$	$z_{\text{eq}}$	3378.7	$3381 \pm 46$
$y_{\text{cal}}$	1.00028	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0200	$1.000^{+0.030}_{-0.023}$	$k_{\text{eq}}$	0.010312	$0.01032 \pm 0.00014$
$A_{217}^{\text{CIB}}$	66.8	$63.7 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4997	$2.491 \pm 0.046$	$100\theta_{\text{eq}}$	0.8173	$0.8169 \pm 0.0088$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$z_{\text{re}}$	10.10	$10.2^{+2.0}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45153	$0.4513 \pm 0.0045$
$A_{143}^{\text{tSZ}}$	7.25	$5.2 \pm 1.9$	$10^9 A_s$	2.202	$2.211 \pm 0.085$	$r_{\text{drag}}/D_V(0.57)$	0.07196	$0.0713^{+0.0010}_{-0.00083}$
$A_{100}^{\text{PS}}$	250.4	$258 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8777	$1.877 \pm 0.014$	$H(0.57)$	93.30	$92.72^{+0.77}_{-0.53}$
$A_{143}^{\text{PS}}$	38.0	$44 \pm 8$	$D_{40}$	1233.7	$1235 \pm 15$	$D_A(0.57)$	1380.0	$1396^{+15}_{-22}$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$D_{220}$	5719.9	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67424	$0.6776^{+0.0036}_{-0.0051}$
$A_{217}^{\text{PS}}$	97.3	$98 \pm 10$	$D_{810}$	2533.3	$2533 \pm 14$	$f\sigma_8(0.57)$	0.4866	$0.479^{+0.014}_{-0.011}$
$A^{\text{kSZ}}$	0.02	$< 4.55$	$D_{1420}$	814.86	$814.6 \pm 5.0$	$\sigma_8(0.57)$	0.6277	$0.608^{+0.025}_{-0.015}$
$A_{100}^{\text{dustTT}}$	7.47	$7.4 \pm 1.9$	$D_{2000}$	230.69	$230.3 \pm 1.9$	$f_{2000}^{143}$	29.22	$29.9 \pm 3.0$
$A_{143}^{\text{dustTT}}$	9.01	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9673	$0.9666 \pm 0.0060$	$f_{2000}^{143 \times 217}$	31.96	$32.4 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.62	$17.1 \pm 4.1$	$Y_{\text{P}}$	0.245362	$0.24533 \pm 0.00010$	$f_{2000}^{217}$	105.66	$106.0 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246688	$0.24666 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10496.47	$10497.5 \pm 2.6$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$10^5 D/H$	2.6048	$2.616 \pm 0.044$	$\chi_{\text{plik}}^2$	763.0	$777.7 \pm 5.8$
$c_{217}$	0.99592	$0.9959 \pm 0.0015$	Age/Gyr	13.770	$13.833^{+0.048}_{-0.082}$	$\chi_{\text{JLA}}^2$	706.58	$707.22 \pm 0.93$
$H_0$	68.15	$67.1^{+1.5}_{-1.1}$	$z_*$	1089.924	$1090.02 \pm 0.42$	$\chi_{\text{prior}}^2$	2.10	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6955	$0.682^{+0.021}_{-0.014}$	$r_*$	144.728	$144.72 \pm 0.46$	$\chi_{\text{CMB}}^2$	11259.5	$11275.2 \pm 5.7$

Best-fit  $\chi_{\text{eff}}^2 = 11968.16$ ;  $\Delta\chi_{\text{eff}}^2 = -0.58$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.73$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.13$ ;  $R - 1 = 0.01054$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.47 ( $\Delta$  0.02) plik\_dx11dr2\_HM.v18\_TT: 763.00 ( $\Delta$  -0.42) SN - JLA December\_2013: 706.59 ( $\Delta$  -0.18)

### 7.3 base\_mnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022294	$0.02225 \pm 0.00023$	$\Omega_m$	0.3042	$0.317^{+0.014}_{-0.022}$	$100\theta_*$	1.041158	$1.04112 \pm 0.00047$
$\Omega_c h^2$	0.11905	$0.1192 \pm 0.0021$	$\Omega_m h^2$	0.14135	$0.1427^{+0.0022}_{-0.0026}$	$D_A/\text{Gpc}$	13.9021	$13.901 \pm 0.045$
$100\theta_{\text{MC}}$	1.040995	$1.04090 \pm 0.00049$	$\Omega_\nu h^2$	0.00001	$< 0.00141$	$z_{\text{drag}}$	1059.704	$1059.61 \pm 0.48$
$\tau$	0.0800	$0.082 \pm 0.020$	$\Omega_m h^3$	0.09635	$0.09574^{+0.00094}_{-0.00053}$	$r_{\text{drag}}$	147.434	$147.43 \pm 0.48$
$\Sigma m_\nu [\text{eV}]$	0.001	$< 0.131$	$\sigma_8$	0.8422	$0.820^{+0.030}_{-0.019}$	$k_D$	0.14044	$0.14042 \pm 0.00052$
$\ln(10^{10} A_s)$	3.0924	$3.096 \pm 0.039$	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.461 \pm 0.013$	$100\theta_D$	0.160907	$0.16094 \pm 0.00027$
$n_s$	0.9676	$0.9668 \pm 0.0062$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.615^{+0.018}_{-0.015}$	$z_{\text{eq}}$	3377.6	$3380 \pm 48$
$y_{\text{cal}}$	1.00029	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0201	$1.001^{+0.030}_{-0.023}$	$k_{\text{eq}}$	0.010309	$0.01032 \pm 0.00015$
$A_{217}^{\text{CIB}}$	66.4	$63.7 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4993	$2.491 \pm 0.047$	$100\theta_{\text{eq}}$	0.8175	$0.8171 \pm 0.0092$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.10	—	$z_{\text{re}}$	10.13	$10.2^{+2.0}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45163	$0.4515 \pm 0.0047$
$A_{143}^{\text{tSZ}}$	7.11	$5.2 \pm 1.9$	$10^9 A_s$	2.203	$2.212 \pm 0.085$	$r_{\text{drag}}/D_V(0.57)$	0.07198	$0.0713^{+0.0011}_{-0.00084}$
$A_{100}^{\text{PS}}$	252.5	$257 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8772	$1.877 \pm 0.014$	$H(0.57)$	93.30	$92.76^{+0.80}_{-0.52}$
$A_{143}^{\text{PS}}$	39.8	$43 \pm 8$	$D_{40}$	1233.0	$1235 \pm 15$	$D_A(0.57)$	1379.8	$1395^{+15}_{-23}$
$A_{143 \times 217}^{\text{PS}}$	35.1	$39^{+10}_{-10}$	$D_{220}$	5717.9	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67418	$0.6774^{+0.0037}_{-0.0054}$
$A_{217}^{\text{PS}}$	98.0	$98 \pm 10$	$D_{810}$	2533.1	$2533 \pm 14$	$f\sigma_8(0.57)$	0.4866	$0.479^{+0.014}_{-0.011}$
$A^{\text{kSZ}}$	0.01	$< 4.53$	$D_{1420}$	814.9	$814.7 \pm 5.0$	$\sigma_8(0.57)$	0.6279	$0.609^{+0.025}_{-0.015}$
$A_{100}^{\text{dustTT}}$	7.43	$7.4 \pm 1.9$	$D_{2000}$	230.70	$230.4 \pm 1.9$	$f_{2000}^{143}$	29.27	$29.9 \pm 3.0$
$A_{143}^{\text{dustTT}}$	9.09	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9676	$0.9668 \pm 0.0062$	$f_{2000}^{143 \times 217}$	32.02	$32.3 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.1 \pm 4.1$	$Y_{\text{P}}$	0.245359	$0.24534 \pm 0.00011$	$f_{2000}^{217}$	105.57	$106.0 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246686	$0.24667 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10496.42	$10497.5 \pm 2.6$
$c_{100}$	0.99791	$0.99789 \pm 0.00078$	$10^5 D/H$	2.6056	$2.614 \pm 0.045$	$\chi_{\text{plik}}^2$	763.1	$777.7 \pm 5.8$
$c_{217}$	0.99588	$0.9959 \pm 0.0015$	Age/Gyr	13.770	$13.829^{+0.047}_{-0.085}$	$\chi_{\text{H070p6}}^2$	0.54	$1.3 \pm 1.0$
$H_0$	68.16	$67.1^{+1.6}_{-1.1}$	$z_*$	1089.926	$1090.00 \pm 0.43$	$\chi_{\text{prior}}^2$	2.01	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6958	$0.683^{+0.022}_{-0.014}$	$r_*$	144.742	$144.72 \pm 0.48$	$\chi_{\text{CMB}}^2$	11259.6	$11275.2 \pm 5.7$

Best-fit  $\chi_{\text{eff}}^2 = 11262.11$ ;  $\Delta\chi_{\text{eff}}^2 = -0.71$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.80$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.11$ ;  $R - 1 = 0.01188$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.42 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TT: 763.15 ( $\Delta$  -0.51) Hubble - H070p6: 0.54 ( $\Delta$  -0.29)

## 7.4 base\_mnu\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02214 \pm 0.00027$	$\Omega_m$	$0.339^{+0.016}_{-0.044}$	$100\theta_*$	$1.04097 \pm 0.00049$
$\Omega_c h^2$	$0.1202 \pm 0.0024$	$\Omega_m h^2$	$0.1449^{+0.0025}_{-0.0044}$	$D_A/\text{Gpc}$	$13.881 \pm 0.049$
$100\theta_{\text{MC}}$	$1.04068 \pm 0.00054$	$\Omega_\nu h^2$	$< 0.00289$	$z_{\text{drag}}$	$1059.44 \pm 0.51$
$\tau$	$0.082 \pm 0.019$	$\Omega_m h^3$	$0.0949^{+0.0019}_{-0.00071}$	$r_{\text{drag}}$	$147.24 \pm 0.52$
$\Sigma m_\nu [\text{eV}]$	$< 0.269$	$\sigma_8$	$0.796^{+0.057}_{-0.023}$	$k_D$	$0.14056 \pm 0.00054$
$\ln(10^{10} A_s)$	$3.098 \pm 0.036$	$\sigma_8 \Omega_m^{0.5}$	$0.462 \pm 0.014$	$100\theta_D$	$0.16101 \pm 0.00028$
$n_s$	$0.9638^{+0.0075}_{-0.0068}$	$\sigma_8 \Omega_m^{0.25}$	$0.606^{+0.029}_{-0.016}$	$z_{\text{eq}}$	$3402 \pm 53$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	$0.983^{+0.051}_{-0.025}$	$k_{\text{eq}}$	$0.01039 \pm 0.00016$
$A_{217}^{\text{CIB}}$	$64.2 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	$2.501 \pm 0.046$	$100\theta_{\text{eq}}$	$0.8130 \pm 0.0098$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.3 \pm 1.7$	$100\theta_{\text{s,eq}}$	$0.4494 \pm 0.0050$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 1.9$	$10^9 A_s$	$2.216^{+0.076}_{-0.091}$	$r_{\text{drag}}/D_V(0.57)$	$0.0703^{+0.0020}_{-0.00099}$
$A_{100}^{\text{PS}}$	$260 \pm 28$	$10^9 A_s e^{-2\tau}$	$1.881 \pm 0.014$	$H(0.57)$	$92.0^{+1.5}_{-0.68}$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$D_{40}$	$1238 \pm 15$	$D_A(0.57)$	$1417^{+18}_{-46}$
$A_{143 \times 217}^{\text{PS}}$	$40^{+10}_{-10}$	$D_{220}$	$5715 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6827^{+0.0043}_{-0.011}$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$D_{810}$	$2534 \pm 14$	$f\sigma_8(0.57)$	$0.471^{+0.024}_{-0.011}$
$A^{\text{kSZ}}$	$< 4.80$	$D_{1420}$	$814.2 \pm 5.1$	$\sigma_8(0.57)$	$0.588^{+0.049}_{-0.019}$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$D_{2000}$	$229.8 \pm 2.0$	$f_{2000}^{143}$	$30.6 \pm 3.1$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	$0.9638^{+0.0075}_{-0.0068}$	$f_{2000}^{143 \times 217}$	$33.0 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.1$	$Y_{\text{P}}$	$0.24529 \pm 0.00012$	$f_{2000}^{217}$	$106.5 \pm 2.2$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	$0.24661 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	$10497.8 \pm 2.6$
$c_{100}$	$0.99787 \pm 0.00078$	$10^5 \text{D}/\text{H}$	$2.636^{+0.048}_{-0.056}$	$\chi_{\text{plik}}^2$	$778.4 \pm 5.9$
$c_{217}$	$0.9960 \pm 0.0015$	$\text{Age}/\text{Gyr}$	$13.912^{+0.064}_{-0.17}$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$H_0$	$65.6^{+3.1}_{-1.4}$	$z_*$	$1090.28^{+0.48}_{-0.59}$	$\chi_{\text{CMB}}^2$	$11276.1 \pm 5.9$
$\Omega_\Lambda$	$0.661^{+0.044}_{-0.016}$	$r_*$	$144.50 \pm 0.54$		

$$\bar{\chi}_{\text{eff}}^2 = 11283.53; \Delta\bar{\chi}_{\text{eff}}^2 = 1.89; R - 1 = 0.00979$$

## 7.5 base\_mnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022256	$0.02222 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	$10^5 D/H$	2.6129	$2.620 \pm 0.032$
$\Omega_c h^2$	0.11979	$0.1200 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	Age/Gyr	13.784	$13.868^{+0.040}_{-0.11}$
$100\theta_{MC}$	1.040772	$1.04068 \pm 0.00034$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.340 \pm 0.081$	$z_*$	1090.041	$1090.13^{+0.31}_{-0.35}$
$\tau$	0.0769	$0.083 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.672	$1.67 \pm 0.26$	$r_*$	144.579	$144.53 \pm 0.33$
$\Sigma m_\nu$ [eV]	0.002	$< 0.188$	$c_{100}$	0.99821	$0.99817 \pm 0.00078$	$100\theta_*$	1.040941	$1.04093 \pm 0.00032$
$\ln(10^{10} A_s)$	3.0891	$3.100 \pm 0.034$	$c_{217}$	0.99590	$0.9960 \pm 0.0015$	$D_A/\text{Gpc}$	13.8893	$13.885 \pm 0.031$
$n_s$	0.96507	$0.9639 \pm 0.0050$	$H_0$	67.79	$66.3^{+2.0}_{-0.89}$	$z_{\text{drag}}$	1059.666	$1059.60 \pm 0.32$
$y_{\text{cal}}$	1.00033	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6909	$0.672^{+0.026}_{-0.011}$	$r_{\text{drag}}$	147.280	$147.24 \pm 0.32$
$A_{217}^{\text{CIB}}$	65.1	$64.0 \pm 6.6$	$\Omega_m$	0.3091	$0.328^{+0.011}_{-0.026}$	$k_D$	0.140574	$0.14060 \pm 0.00034$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.27	—	$\Omega_m h^2$	0.14207	$0.1440^{+0.0016}_{-0.0027}$	$100\theta_D$	0.160903	$0.16092 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	7.03	$5.3 \pm 1.9$	$\Omega_\nu h^2$	0.00002	$< 0.00202$	$z_{\text{eq}}$	3394.5	$3398 \pm 33$
$A_{100}^{\text{PS}}$	254.2	$261 \pm 28$	$\Omega_m h^3$	0.09631	$0.0954^{+0.0012}_{-0.00042}$	$k_{\text{eq}}$	0.010360	$0.01037 \pm 0.00010$
$A_{143}^{\text{PS}}$	42.7	$44 \pm 8$	$\sigma_8$	0.8424	$0.812^{+0.039}_{-0.017}$	$100\theta_{\text{eq}}$	0.8142	$0.8136 \pm 0.0063$
$A_{143 \times 217}^{\text{PS}}$	40.7	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4684	$0.464 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.44993	$0.4497 \pm 0.0032$
$A_{217}^{\text{PS}}$	100.9	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6282	$0.614^{+0.021}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.0708^{+0.0013}_{-0.00064}$
$A^{\text{kSZ}}$	0.00	$< 4.22$	$\sigma_8/h^{0.5}$	1.0232	$0.997^{+0.036}_{-0.019}$	$H(0.57)$	93.14	$92.37^{+0.99}_{-0.43}$
$A_{100}^{\text{dust}TT}$	7.39	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5085	$2.506 \pm 0.040$	$D_A(0.57)$	1384.8	$1406^{+12}_{-28}$
$A_{143}^{\text{dust}TT}$	8.96	$8.9 \pm 1.8$	$z_{\text{re}}$	9.87	$10.4^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67543	$0.6802^{+0.0029}_{-0.0064}$
$A_{143 \times 217}^{\text{dust}TT}$	17.80	$17.1 \pm 4.1$	$10^9 A_s$	2.196	$2.222 \pm 0.076$	$f\sigma_8(0.57)$	0.4881	$0.477^{+0.016}_{-0.0088}$
$A_{217}^{\text{dust}TT}$	82.2	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8826	$1.883 \pm 0.012$	$\sigma_8(0.57)$	0.6268	$0.601^{+0.033}_{-0.014}$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0811 \pm 0.0057$	$D_{40}$	1239.0	$1242 \pm 13$	$f_{2000}^{143}$	29.02	$29.8 \pm 2.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.04873	$0.0487 \pm 0.0050$	$D_{220}$	5726.1	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	32.02	$32.4 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.0997 \pm 0.033$	$D_{810}$	2535.9	$2536 \pm 14$	$f_{2000}^{217}$	105.55	$106.1 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1001	$0.1001 \pm 0.0069$	$D_{1420}$	814.91	$814.8 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10496.79	$10498.1 \pm 2.4$
$A_{143 \times 217}^{\text{dust}EE}$	0.2232	$0.224 \pm 0.047$	$D_{2000}$	230.59	$230.3 \pm 1.7$	$\chi_{\text{plik}}^2$	2431.5	$2451.5 \pm 7.0$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$n_{s,0.002}$	0.96507	$0.9639 \pm 0.0050$	$\chi_{\text{prior}}^2$	6.7	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1397	$0.141 \pm 0.038$	$Y_P$	0.245342	$0.245323^{+0.000083}_{-0.000073}$	$\chi_{\text{CMB}}^2$	12928.3	$12949.6 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	0.246669	$0.246649^{+0.000084}_{-0.000074}$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.02$ ;  $\Delta\chi_{\text{eff}}^2 = -0.54$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.17$ ;  $R - 1 = 0.00787$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.79 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.52 ( $\Delta$  -0.12)



## 7.6 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022275	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	$10^5 \text{D/H}$	2.6092	$2.612 \pm 0.030$
$\Omega_c h^2$	0.11960	$0.1196 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	Age/Gyr	13.780	$13.831^{+0.034}_{-0.067}$
$100\theta_{\text{MC}}$	1.040828	$1.04075 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.339 \pm 0.081$	$z_*$	1090.001	$1090.03 \pm 0.29$
$\tau$	0.0789	$0.082 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.25$	$r_*$	144.614	$144.62 \pm 0.31$
$\Sigma m_\nu [\text{eV}]$	0.001	$< 0.125$	$c_{100}$	0.99820	$0.99817 \pm 0.00078$	$100\theta_*$	1.040989	$1.04097 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0921	$3.099 \pm 0.034$	$c_{217}$	0.99592	$0.9960 \pm 0.0014$	$D_A/\text{Gpc}$	13.8920	$13.893 \pm 0.029$
$n_s$	0.96532	$0.9651 \pm 0.0047$	$H_0$	67.89	$67.0^{+1.2}_{-0.79}$	$z_{\text{drag}}$	1059.666	$1059.65 \pm 0.31$
$y_{\text{cal}}$	1.00013	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6922	$0.681^{+0.016}_{-0.010}$	$r_{\text{drag}}$	147.312	$147.32 \pm 0.31$
$A_{217}^{\text{CIB}}$	66.0	$63.8 \pm 6.6$	$\Omega_m$	0.3078	$0.319^{+0.010}_{-0.016}$	$k_D$	0.140560	$0.14054 \pm 0.00033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.15	—	$\Omega_m h^2$	0.14188	$0.1430^{+0.0015}_{-0.0019}$	$100\theta_D$	0.160889	$0.16090 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	7.18	$5.4 \pm 1.9$	$\Omega_\nu h^2$	0.00001	$< 0.00135$	$z_{\text{eq}}$	3390.4	$3390 \pm 32$
$A_{100}^{\text{PS}}$	254.1	$260 \pm 28$	$\Omega_m h^3$	0.09633	$0.09579^{+0.00074}_{-0.00038}$	$k_{\text{eq}}$	0.010348	$0.010346 \pm 0.000097$
$A_{143}^{\text{PS}}$	40.1	$43 \pm 8$	$\sigma_8$	0.8432	$0.824^{+0.026}_{-0.016}$	$100\theta_{\text{eq}}$	0.8150	$0.8152 \pm 0.0060$
$A_{143 \times 217}^{\text{PS}}$	36.6	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4678	$0.465 \pm 0.010$	$100\theta_{\text{s,eq}}$	0.45035	$0.4505 \pm 0.0031$
$A_{217}^{\text{PS}}$	99.0	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.619^{+0.015}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07176	$0.07122^{+0.00082}_{-0.00058}$
$A^{\text{kSZ}}$	0.00	$< 4.09$	$\sigma_8/h^{0.5}$	1.0233	$1.006^{+0.025}_{-0.019}$	$H(0.57)$	93.19	$92.72^{+0.63}_{-0.37}$
$A_{100}^{\text{dust}TT}$	7.38	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5097	$2.504 \pm 0.040$	$D_A(0.57)$	1383.4	$1396^{+11}_{-18}$
$A_{143}^{\text{dust}TT}$	8.93	$8.9 \pm 1.8$	$z_{\text{re}}$	10.04	$10.3^{+1.7}_{-1.4}$	$F_{\text{AP}}(0.57)$	0.67509	$0.6778^{+0.0026}_{-0.0040}$
$A_{143 \times 217}^{\text{dust}TT}$	17.53	$17.0 \pm 4.1$	$10^9 A_s$	2.202	$2.219 \pm 0.074$	$f\sigma_8(0.57)$	0.4881	$0.481^{+0.011}_{-0.0088}$
$A_{217}^{\text{dust}TT}$	81.9	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8808	$1.881 \pm 0.012$	$\sigma_8(0.57)$	0.6277	$0.611^{+0.021}_{-0.012}$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0811 \pm 0.0057$	$D_{40}$	1238.9	$1241 \pm 13$	$f_{2000}^{143}$	29.04	$29.5 \pm 2.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04879	$0.0488 \pm 0.0050$	$D_{220}$	5725.9	$5731 \pm 39$	$f_{2000}^{143 \times 217}$	31.96	$32.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0986	$0.100 \pm 0.033$	$D_{810}$	2534.3	$2536 \pm 14$	$f_{2000}^{217}$	105.56	$105.8 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.0999	$0.1003 \pm 0.0068$	$D_{1420}$	814.46	$815.0 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10496.97	$10497.9 \pm 2.4$
$A_{143 \times 217}^{\text{dust}EE}$	0.2233	$0.223 \pm 0.047$	$D_{2000}$	230.51	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2431.2	$2450.9 \pm 6.9$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$n_{s,0.002}$	0.96532	$0.9651 \pm 0.0047$	$\chi_{\text{JLA}}^2$	706.653	$707.16 \pm 0.74$
$A_{100}^{\text{dust}TE}$	0.1419	$0.142 \pm 0.038$	$Y_P$	0.245351	$0.245342 \pm 0.000071$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1320	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	0.246677	$0.246669 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12928.2	$12948.8 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 13641.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.65$ ;  $R - 1 = 0.00899$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.97 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.20 ( $\Delta$  -0.41) SN - JLA December\_2013: 706.65 ( $\Delta$  -0.20)

## 7.7 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022299	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$10^5 \text{D/H}$	2.6047	$2.611 \pm 0.030$
$\Omega_c h^2$	0.11940	$0.1196 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	Age/Gyr	13.776	$13.829^{+0.033}_{-0.068}$
$100\theta_{\text{MC}}$	1.040849	$1.04076 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.081$	$z_*$	1089.953	$1090.02 \pm 0.30$
$\tau$	0.0807	$0.082 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.662	$1.67 \pm 0.25$	$r_*$	144.648	$144.62 \pm 0.32$
$\Sigma m_\nu [\text{eV}]$	0.000	$< 0.121$	$c_{100}$	0.99819	$0.99817 \pm 0.00078$	$100\theta_*$	1.041003	$1.04098 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0954	$3.099 \pm 0.034$	$c_{217}$	0.99587	$0.9960 \pm 0.0014$	$D_A/\text{Gpc}$	13.8951	$13.893 \pm 0.030$
$n_s$	0.96636	$0.9651 \pm 0.0048$	$H_0$	67.99	$67.0^{+1.3}_{-0.79}$	$z_{\text{drag}}$	1059.742	$1059.66 \pm 0.31$
$y_{\text{cal}}$	1.00022	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6935	$0.682^{+0.017}_{-0.010}$	$r_{\text{drag}}$	147.336	$147.32 \pm 0.31$
$A_{217}^{\text{CIB}}$	65.3	$63.8 \pm 6.6$	$\Omega_m$	0.3065	$0.318^{+0.010}_{-0.017}$	$k_D$	0.140549	$0.14055 \pm 0.00033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.14170	$0.1429^{+0.0015}_{-0.0019}$	$100\theta_D$	0.160865	$0.16090 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	7.16	$5.4 \pm 1.9$	$\Omega_\nu h^2$	0.00000	$< 0.00130$	$z_{\text{eq}}$	3386.1	$3389 \pm 32$
$A_{100}^{\text{PS}}$	252.0	$260 \pm 28$	$\Omega_m h^3$	0.09634	$0.09582^{+0.00073}_{-0.00037}$	$k_{\text{eq}}$	0.010334	$0.010345 \pm 0.000099$
$A_{143}^{\text{PS}}$	40.2	$43 \pm 8$	$\sigma_8$	0.8441	$0.824^{+0.026}_{-0.016}$	$100\theta_{\text{eq}}$	0.8159	$0.8153 \pm 0.0062$
$A_{143 \times 217}^{\text{PS}}$	37.6	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4673	$0.465 \pm 0.010$	$100\theta_{\text{s,eq}}$	0.45078	$0.4505 \pm 0.0031$
$A_{217}^{\text{PS}}$	99.7	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.619^{+0.015}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.07183	$0.07124^{+0.00085}_{-0.00058}$
$A^{\text{kSZ}}$	0.00	$< 4.08$	$\sigma_8/h^{0.5}$	1.0237	$1.006^{+0.025}_{-0.019}$	$H(0.57)$	93.23	$92.74^{+0.64}_{-0.36}$
$A_{100}^{\text{dust}TT}$	7.43	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5093	$2.504 \pm 0.040$	$D_A(0.57)$	1382.0	$1396^{+11}_{-18}$
$A_{143}^{\text{dust}TT}$	8.90	$8.9 \pm 1.8$	$z_{\text{re}}$	10.19	$10.3^{+1.7}_{-1.4}$	$F_{\text{AP}}(0.57)$	0.67477	$0.6777^{+0.0026}_{-0.0041}$
$A_{143 \times 217}^{\text{dust}TT}$	17.52	$17.0 \pm 4.1$	$10^9 A_s$	2.210	$2.219 \pm 0.074$	$f\sigma_8(0.57)$	0.4883	$0.482^{+0.011}_{-0.0087}$
$A_{217}^{\text{dust}TT}$	81.9	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8802	$1.881 \pm 0.012$	$\sigma_8(0.57)$	0.6287	$0.612^{+0.021}_{-0.012}$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0811 \pm 0.0057$	$D_{40}$	1237.3	$1241 \pm 13$	$f_{2000}^{143}$	28.60	$29.4 \pm 2.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.04881	$0.0488 \pm 0.0050$	$D_{220}$	5725.3	$5731 \pm 39$	$f_{2000}^{143 \times 217}$	31.60	$32.2 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.100 \pm 0.033$	$D_{810}$	2534.8	$2536 \pm 14$	$f_{2000}^{217}$	105.27	$105.8 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1003 \pm 0.0068$	$D_{1420}$	815.03	$815.0 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10496.91	$10497.9 \pm 2.4$
$A_{143 \times 217}^{\text{dust}EE}$	0.2223	$0.223 \pm 0.047$	$D_{2000}$	230.77	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2431.2	$2450.9 \pm 6.9$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$n_{s,0.002}$	0.96636	$0.9651 \pm 0.0048$	$\chi_{\text{H070p6}}^2$	0.62	$1.24 \pm 0.81$
$A_{100}^{\text{dust}TE}$	0.1414	$0.142 \pm 0.038$	$Y_P$	0.245362	$0.245344 \pm 0.000072$	$\chi_{\text{prior}}^2$	6.9	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1320	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	0.246688	$0.246671 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12928.1	$12948.8 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 12935.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.37$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.63$ ;  $R - 1 = 0.00898$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.91 ( $\Delta$  -0.09) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.20 ( $\Delta$  -0.57) Hubble - H070p6: 0.62 ( $\Delta$  -0.28)

## 7.8 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02222 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	$0.304 \pm 0.084$	$10^5 \text{D/H}$	$2.620^{+0.030}_{-0.034}$
$\Omega_c h^2$	$0.1200 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	$0.155 \pm 0.054$	Age/Gyr	$13.869^{+0.041}_{-0.11}$
$100\theta_{\text{MC}}$	$1.04068 \pm 0.00034$	$A_{143 \times 217}^{\text{dust}TE}$	$0.340 \pm 0.081$	$z_*$	$1090.13^{+0.30}_{-0.35}$
$\tau$	$0.083 \pm 0.017$	$A_{217}^{\text{dust}TE}$	$1.68 \pm 0.25$	$r_*$	$144.53 \pm 0.33$
$\Sigma m_\nu [\text{eV}]$	$< 0.189$	$c_{100}$	$0.99817 \pm 0.00078$	$100\theta_*$	$1.04093 \pm 0.00032$
$\ln(10^{10} A_s)$	$3.102 \pm 0.033$	$c_{217}$	$0.9960 \pm 0.0014$	$D_A/\text{Gpc}$	$13.885 \pm 0.031$
$n_s$	$0.9640 \pm 0.0049$	$H_0$	$66.3^{+2.0}_{-0.90}$	$z_{\text{drag}}$	$1059.60 \pm 0.32$
$y_{\text{cal}}$	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	$0.672^{+0.026}_{-0.011}$	$r_{\text{drag}}$	$147.24 \pm 0.32$
$A_{217}^{\text{CIB}}$	$64.0 \pm 6.6$	$\Omega_m$	$0.328^{+0.011}_{-0.026}$	$k_D$	$0.14060 \pm 0.00034$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1440^{+0.0016}_{-0.0028}$	$100\theta_D$	$0.16092 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	$5.3 \pm 1.9$	$\Omega_\nu h^2$	$< 0.00204$	$z_{\text{eq}}$	$3398 \pm 33$
$A_{100}^{\text{PS}}$	$261 \pm 28$	$\Omega_m h^3$	$0.0954^{+0.0012}_{-0.00043}$	$k_{\text{eq}}$	$0.01037 \pm 0.00010$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$\sigma_8$	$0.812^{+0.039}_{-0.017}$	$100\theta_{\text{eq}}$	$0.8137 \pm 0.0063$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	$0.465 \pm 0.011$	$100\theta_{s,\text{eq}}$	$0.4497 \pm 0.0032$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.614^{+0.020}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	$0.0708^{+0.0013}_{-0.00065}$
$A^{\text{kSZ}}$	$< 4.24$	$\sigma_8/h^{0.5}$	$0.997^{+0.036}_{-0.019}$	$H(0.57)$	$92.37^{+0.99}_{-0.43}$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	$2.507 \pm 0.039$	$D_A(0.57)$	$1406^{+12}_{-28}$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$z_{\text{re}}$	$10.4 \pm 1.5$	$F_{\text{AP}}(0.57)$	$0.6802^{+0.0029}_{-0.0064}$
$A_{143 \times 217}^{\text{dust}TT}$	$17.0 \pm 4.1$	$10^9 A_s$	$2.224 \pm 0.073$	$f\sigma_8(0.57)$	$0.477^{+0.016}_{-0.0086}$
$A_{217}^{\text{dust}TT}$	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	$1.883 \pm 0.012$	$\sigma_8(0.57)$	$0.601^{+0.033}_{-0.013}$
$A_{100}^{\text{dust}EE}$	$0.0811 \pm 0.0057$	$D_{40}$	$1242 \pm 13$	$f_{2000}^{143}$	$29.7 \pm 2.8$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0487 \pm 0.0050$	$D_{220}$	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	$32.4 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0998 \pm 0.033$	$D_{810}$	$2536 \pm 14$	$f_{2000}^{217}$	$106.1 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.1001 \pm 0.0068$	$D_{1420}$	$814.8 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	$10498.1 \pm 2.4$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.047$	$D_{2000}$	$230.3 \pm 1.7$	$\chi_{\text{plik}}^2$	$2451.4 \pm 7.0$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$n_{s,0.002}$	$0.9640 \pm 0.0049$	$\chi_{\text{prior}}^2$	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P$	$0.245324^{+0.000083}_{-0.000072}$	$\chi_{\text{CMB}}^2$	$12949.5 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	$0.246650^{+0.000084}_{-0.000073}$		

$$\bar{\chi}_{\text{eff}}^2 = 12968.81; \Delta\bar{\chi}_{\text{eff}}^2 = 1.13; R - 1 = 0.00798$$

## 7.9 base\_mnu\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022380	$0.02223 \pm 0.00028$	$\sigma_8$	0.798	$0.701^{+0.10}_{-0.068}$	$D_A/\text{Gpc}$	13.9271	$13.904 \pm 0.050$
$\Omega_c h^2$	0.11775	$0.1181 \pm 0.0020$	$\sigma_8 \Omega_m^{0.5}$	0.4425	$0.421^{+0.026}_{-0.023}$	$z_{\text{drag}}$	1059.78	$1059.62 \pm 0.55$
$100\theta_{\text{MC}}$	1.04096	$1.04077 \pm 0.00053$	$\sigma_8 \Omega_m^{0.25}$	0.5941	$0.543^{+0.056}_{-0.040}$	$r_{\text{drag}}$	147.68	$147.48 \pm 0.54$
$\tau$	0.0614	$0.061 \pm 0.021$	$\sigma_8/h^{0.5}$	0.969	$0.877^{+0.098}_{-0.068}$	$k_D$	0.14026	$0.14051 \pm 0.00065$
$\Sigma m_\nu [\text{eV}]$	0.112	$< 0.743$	$\langle d^2 \rangle^{1/2}$	2.401	$2.388 \pm 0.056$	$100\theta_D$	0.160825	$0.16081 \pm 0.00033$
$\ln(10^{10} A_s)$	3.0473	$3.041 \pm 0.044$	$z_{\text{re}}$	8.36	$8.3^{+2.3}_{-1.9}$	$z_{\text{eq}}$	3348.8	$3353 \pm 46$
$n_s$	0.9737	$0.966 \pm 0.012$	$10^9 A_s$	2.106	$2.094^{+0.090}_{-0.10}$	$k_{\text{eq}}$	0.010221	$0.01025 \pm 0.00014$
$y_{\text{cal}}$	0.99984	$0.99996 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8625	$1.852 \pm 0.020$	$100\theta_{\text{eq}}$	0.8231	$0.8231 \pm 0.0090$
$A_{100}^{\text{dustTE}}$	0.1407	$0.135 \pm 0.038$	$D_{40}$	1204.6	$1200 \pm 23$	$100\theta_{s,\text{eq}}$	0.45447	$0.4546 \pm 0.0046$
$A_{100 \times 143}^{\text{dustTE}}$	0.1312	$0.132 \pm 0.029$	$D_{220}$	5680	$5689 \pm 57$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.0691^{+0.0028}_{-0.0019}$
$A_{100 \times 217}^{\text{dustTE}}$	0.298	$0.304 \pm 0.084$	$D_{810}$	2525.2	$2514 \pm 27$	$H(0.57)$	93.01	$90.9^{+2.2}_{-1.6}$
$A_{143}^{\text{dustTE}}$	0.154	$0.151 \pm 0.054$	$D_{1420}$	815.4	$810 \pm 12$	$D_A(0.57)$	1386	$1450^{+40}_{-71}$
$A_{143 \times 217}^{\text{dustTE}}$	0.328	$0.334 \pm 0.080$	$D_{2000}$	230.52	$227.6 \pm 4.7$	$F_{\text{AP}}(0.57)$	0.6751	$0.6893^{+0.0086}_{-0.016}$
$A_{217}^{\text{dustTE}}$	1.650	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9737	$0.966 \pm 0.012$	$f\sigma_8(0.57)$	0.4639	$0.421^{+0.048}_{-0.030}$
$c_{100}$	0.99907	$0.99924 \pm 0.00099$	$Y_P$	0.245397	$0.24533 \pm 0.00013$	$\sigma_8(0.57)$	0.595	$0.514^{+0.086}_{-0.056}$
$H_0$	67.77	$63.5^{+4.5}_{-2.8}$	$Y_P^{\text{BBN}}$	0.246724	$0.24666 \pm 0.00013$	$\chi_{\text{lowTEB}}^2$	10493.34	$10494.5 \pm 1.9$
$\Omega_\Lambda$	0.692	$0.632^{+0.071}_{-0.034}$	$10^5 D/H$	2.589	$2.618 \pm 0.053$	$\chi_{\text{plikTE}}^2$	932.23	$939.5 \pm 4.3$
$\Omega_m$	0.308	$0.368^{+0.034}_{-0.071}$	Age/Gyr	13.807	$14.06^{+0.16}_{-0.27}$	$\chi_{\text{prior}}^2$	1.60	$7.9 \pm 3.6$
$\Omega_m h^2$	0.14134	$0.1466^{+0.0038}_{-0.0059}$	$z_*$	1089.71	$1090.10^{+0.49}_{-0.60}$	$\chi_{\text{CMB}}^2$	11425.57	$11434.0 \pm 4.4$
$\Omega_\nu h^2$	0.00121	$< 0.00799$	$r_*$	145.01	$144.77 \pm 0.53$			
$\Omega_m h^3$	0.09578	$0.0930^{+0.0031}_{-0.0018}$	$100\theta_*$	1.041172	$1.04117 \pm 0.00050$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.17$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.71$ ;  $R - 1 = 0.00840$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.34 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TE: 932.23 ( $\Delta$  0.50)

## 7.10 base\_mnu\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02211	$0.0226^{+0.0013}_{-0.0017}$	$\sigma_8$	0.455	$0.504^{+0.060}_{-0.17}$	$100\theta_*$	1.04058	$1.0408^{+0.0011}_{-0.0013}$
$\Omega_c h^2$	0.1163	$0.1133^{+0.0053}_{-0.0060}$	$\sigma_8 \Omega_m^{0.5}$	0.3747	$0.373^{+0.030}_{-0.040}$	$D_A/\text{Gpc}$	13.691	$13.74^{+0.11}_{-0.16}$
$100\theta_{\text{MC}}$	1.03986	$1.0403 \pm 0.0011$	$\sigma_8 \Omega_m^{0.25}$	0.413	$0.432^{+0.044}_{-0.089}$	$z_{\text{drag}}$	1060.47	$1061.2 \pm 2.8$
$\tau$	0.0655	$0.065 \pm 0.020$	$\sigma_8/h^{0.5}$	0.644	$0.682^{+0.072}_{-0.16}$	$r_{\text{drag}}$	145.13	$145.60^{+0.95}_{-1.3}$
$\Sigma m_\nu [\text{eV}]$	2.84	—	$\langle d^2 \rangle^{1/2}$	2.511	$2.47^{+0.13}_{-0.11}$	$k_D$	0.14403	$0.1436 \pm 0.0018$
$\ln(10^{10} A_s)$	3.0663	$3.064 \pm 0.044$	$z_{\text{re}}$	9.28	$8.9^{+2.3}_{-2.0}$	$100\theta_D$	0.15932	$0.1592^{+0.0014}_{-0.0017}$
$n_s$	0.9529	$0.960^{+0.017}_{-0.022}$	$10^9 A_s$	2.146	$2.142^{+0.092}_{-0.10}$	$z_{\text{eq}}$	3309	$3248 \pm 130$
$y_{\text{cal}}$	1.00010	$1.0001 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8827	$1.880^{+0.034}_{-0.030}$	$k_{\text{eq}}$	0.010267	$0.01008^{+0.00028}_{-0.00033}$
$A_{100}^{\text{dustEE}}$	0.0821	$0.0824 \pm 0.0059$	$D_{40}$	1172.8	$1180 \pm 38$	$100\theta_{\text{eq}}$	0.8420	$0.855^{+0.030}_{-0.037}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0495	$0.0497 \pm 0.0054$	$D_{220}$	5749	$5782^{+320}_{-270}$	$100\theta_{\text{s,eq}}$	0.4650	$0.472^{+0.015}_{-0.021}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0989	$0.099 \pm 0.032$	$D_{810}$	2587.1	$2587 \pm 44$	$r_{\text{drag}}/D_V(0.57)$	0.06061	$0.0631^{+0.0023}_{-0.0065}$
$A_{143}^{\text{dustEE}}$	0.1007	$0.1009 \pm 0.0073$	$D_{1420}$	842.0	$842 \pm 22$	$H(0.57)$	85.68	$87.4^{+1.0}_{-3.9}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2246	$0.224 \pm 0.047$	$D_{2000}$	236.2	$237.3 \pm 8.6$	$D_A(0.57)$	1671	$1610^{+200}_{-90}$
$A_{217}^{\text{dustEE}}$	0.646	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.9529	$0.960^{+0.017}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.7498	$0.734^{+0.053}_{-0.031}$
$H_0$	49.9	$53.8^{+4.5}_{-11}$	$Y_P$	0.24527	$0.24546 \pm 0.00064$	$f\sigma_8(0.57)$	0.293	$0.315^{+0.040}_{-0.093}$
$\Omega_\Lambda$	0.321	$0.39^{+0.31}_{-0.17}$	$Y_P^{\text{BBN}}$	0.24660	$0.24679 \pm 0.00064$	$\sigma_8(0.57)$	0.307	$0.352^{+0.047}_{-0.14}$
$\Omega_m$	0.679	$0.61^{+0.17}_{-0.31}$	$10^5 \text{D}/\text{H}$	2.641	$2.57^{+0.26}_{-0.29}$	$\chi_{\text{lowTEB}}^2$	10493.39	$10494.5 \pm 2.2$
$\Omega_m h^2$	0.1690	$0.163^{+0.019}_{-0.0094}$	Age/Gyr	14.813	$14.60^{+0.66}_{-0.29}$	$\chi_{\text{plikEE}}^2$	751.39	$759.0 \pm 4.5$
$\Omega_\nu h^2$	0.0305	$< 0.0351$	$z_*$	1091.60	$1090.7 \pm 2.7$	$\chi_{\text{prior}}^2$	3.89	$8.2 \pm 3.5$
$\Omega_m h^3$	0.0843	$0.0867^{+0.0044}_{-0.0080}$	$r_*$	142.46	$143.05^{+0.99}_{-1.6}$	$\chi_{\text{CMB}}^2$	11244.78	$11253.6 \pm 4.6$

Best-fit  $\chi_{\text{eff}}^2 = 11248.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 11261.82$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.00$ ;  $R - 1 = 0.00732$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.39 ( $\Delta$  -0.23) plik\_dx11dr2\_HM\_v18\_EE: 751.39 ( $\Delta$  0.19)

## 7.11 base\_mnu\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022262	$0.02210 \pm 0.00029$	$\sigma_8$	0.797	$0.692^{+0.11}_{-0.067}$	$D_A/\text{Gpc}$	13.914	$13.886^{+0.058}_{-0.052}$
$\Omega_c h^2$	0.11860	$0.1192 \pm 0.0021$	$\sigma_8 \Omega_m^{0.5}$	0.4433	$0.422^{+0.026}_{-0.023}$	$z_{\text{drag}}$	1059.59	$1059.39 \pm 0.56$
$100\theta_{\text{MC}}$	1.04103	$1.04066 \pm 0.00054$	$\sigma_8 \Omega_m^{0.25}$	0.5945	$0.540^{+0.058}_{-0.039}$	$r_{\text{drag}}$	147.59	$147.32 \pm 0.58$
$\tau$	0.0505	$0.052 \pm 0.019$	$\sigma_8/h^{0.5}$	0.969	$0.871^{+0.10}_{-0.067}$	$k_D$	0.14026	$0.14058 \pm 0.00069$
$\Sigma m_\nu [\text{eV}]$	0.080	$< 0.765$	$\langle d^2 \rangle^{1/2}$	2.407	$2.403 \pm 0.057$	$100\theta_D$	0.160975	$0.16094 \pm 0.00034$
$\ln(10^{10} A_s)$	3.0257	$3.024 \pm 0.041$	$z_{\text{re}}$	7.29	$7.4^{+2.3}_{-1.8}$	$z_{\text{eq}}$	3366.1	$3375 \pm 48$
$n_s$	0.9646	$0.954^{+0.015}_{-0.014}$	$10^9 A_s$	2.061	$2.058 \pm 0.084$	$k_{\text{eq}}$	0.010273	$0.01032 \pm 0.00015$
$y_{\text{cal}}$	0.99990	$1.0000 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8630	$1.854 \pm 0.020$	$100\theta_{\text{eq}}$	0.8196	$0.8187 \pm 0.0092$
$A_{100}^{\text{dustTE}}$	0.1367	$0.137 \pm 0.038$	$D_{40}$	1222.1	$1223 \pm 27$	$100\theta_{s,\text{eq}}$	0.45275	$0.4524 \pm 0.0047$
$A_{100 \times 143}^{\text{dustTE}}$	0.1308	$0.132 \pm 0.029$	$D_{220}$	5699	$5717 \pm 60$	$r_{\text{drag}}/D_V(0.57)$	0.07174	$0.0687^{+0.0031}_{-0.0019}$
$A_{100 \times 217}^{\text{dustTE}}$	0.314	$0.303 \pm 0.084$	$D_{810}$	2516.6	$2505 \pm 26$	$H(0.57)$	93.01	$90.6^{+2.3}_{-1.5}$
$A_{143}^{\text{dustTE}}$	0.156	$0.151 \pm 0.054$	$D_{1420}$	808.7	$802 \pm 13$	$D_A(0.57)$	1387	$1459^{+41}_{-77}$
$A_{143 \times 217}^{\text{dustTE}}$	0.327	$0.334 \pm 0.081$	$D_{2000}$	227.81	$224.5 \pm 5.0$	$F_{\text{AP}}(0.57)$	0.6755	$0.6919^{+0.0089}_{-0.018}$
$A_{217}^{\text{dustTE}}$	1.706	$1.66 \pm 0.26$	$n_{s,0.002}$	0.9646	$0.954^{+0.015}_{-0.014}$	$f\sigma_8(0.57)$	0.4634	$0.417^{+0.051}_{-0.030}$
$c_{100}$	0.99919	$0.99926 \pm 0.00099$	$Y_{\text{P}}$	0.245345	$0.24527 \pm 0.00013$	$\sigma_8(0.57)$	0.594	$0.506^{+0.091}_{-0.055}$
$H_0$	67.69	$62.9^{+5.0}_{-2.9}$	$Y_{\text{P}}^{\text{BBN}}$	0.246672	$0.24659 \pm 0.00013$	$\chi_{\text{lowEB}}^2$	5430.81	$5431.7 \pm 1.2$
$\Omega_\Lambda$	0.691	$0.620^{+0.080}_{-0.035}$	$10^5 D/H$	2.612	$2.645 \pm 0.056$	$\chi_{\text{plikTE}}^2$	931.65	$939.1 \pm 4.1$
$\Omega_m$	0.309	$0.380^{+0.035}_{-0.080}$	Age/Gyr	13.804	$14.09^{+0.16}_{-0.29}$	$\chi_{\text{prior}}^2$	1.44	$7.8 \pm 3.6$
$\Omega_m h^2$	0.1417	$0.1478^{+0.0040}_{-0.0066}$	$z_*$	1089.93	$1090.39^{+0.53}_{-0.67}$	$\chi_{\text{CMB}}^2$	6362.46	$6370.8 \pm 4.3$
$\Omega_\nu h^2$	0.00086	$< 0.00823$	$r_*$	144.88	$144.57^{+0.62}_{-0.55}$			
$\Omega_m h^3$	0.09593	$0.0928^{+0.0033}_{-0.0019}$	$100\theta_*$	1.04124	$1.04108 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 6363.89$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 6378.66$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.80$ ;  $R - 1 = 0.01125$

$\chi_{\text{eff}}^2$ : CMB - lowl-QU-70-dx11d-2014-10-03-v5c-AP: 5430.81 ( $\Delta$  0.04) plik-dx11dr2-HM-v18-TE: 931.65 ( $\Delta$  0.41)

## 7.12 base\_mnu\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02413	$0.0225^{+0.0013}_{-0.0016}$	$\sigma_8$	0.810	$0.516^{+0.066}_{-0.19}$	$100\theta_*$	1.03976	$1.0407^{+0.0011}_{-0.0014}$
$\Omega_c h^2$	0.1140	$0.1153^{+0.0052}_{-0.0060}$	$\sigma_8 \Omega_m^{0.5}$	0.4234	$0.383^{+0.030}_{-0.042}$	$D_A/\text{Gpc}$	13.911	$13.71^{+0.13}_{-0.17}$
$100\theta_{\text{MC}}$	1.03978	$1.0401^{+0.0011}_{-0.0013}$	$\sigma_8 \Omega_m^{0.25}$	0.586	$0.442^{+0.047}_{-0.099}$	$z_{\text{drag}}$	1063.48	$1061.2^{+2.5}_{-2.8}$
$\tau$	0.0643	$0.055 \pm 0.019$	$\sigma_8/h^{0.5}$	0.961	$0.697^{+0.077}_{-0.18}$	$r_{\text{drag}}$	146.75	$145.2^{+1.1}_{-1.4}$
$\Sigma m_\nu [\text{eV}]$	0.00	—	$\langle d^2 \rangle^{1/2}$	2.401	$2.50 \pm 0.12$	$k_D$	0.14243	$0.1440^{+0.0020}_{-0.0018}$
$\ln(10^{10} A_s)$	3.0759	$3.049 \pm 0.043$	$z_{\text{re}}$	8.15	$7.8^{+2.3}_{-1.9}$	$100\theta_D$	0.15856	$0.1592^{+0.0014}_{-0.0016}$
$n_s$	0.9764	$0.947^{+0.021}_{-0.025}$	$10^9 A_s$	2.167	$2.111^{+0.088}_{-0.098}$	$z_{\text{eq}}$	3301	$3294 \pm 130$
$y_{\text{cal}}$	0.99984	$1.0000 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.9053	$1.891 \pm 0.031$	$k_{\text{eq}}$	0.010076	$0.01022^{+0.00028}_{-0.00033}$
$A_{100}^{\text{dustEE}}$	0.0814	$0.0803 \pm 0.0060$	$D_{40}$	1250.9	$1214 \pm 43$	$100\theta_{\text{eq}}$	0.8358	$0.846^{+0.031}_{-0.036}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0484	$0.0473 \pm 0.0055$	$D_{220}$	6041	$5829^{+320}_{-260}$	$100\theta_{\text{s,eq}}$	0.4597	$0.467^{+0.017}_{-0.020}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0960	$0.099 \pm 0.032$	$D_{810}$	2593.3	$2585 \pm 43$	$r_{\text{drag}}/D_V(0.57)$	0.07354	$0.0629^{+0.0024}_{-0.0071}$
$A_{143}^{\text{dustEE}}$	0.1001	$0.0983 \pm 0.0074$	$D_{1420}$	842.7	$836 \pm 21$	$H(0.57)$	95.00	$87.5^{+1.1}_{-4.1}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2203	$0.225 \pm 0.047$	$D_{2000}$	240.9	$234.8 \pm 8.4$	$D_A(0.57)$	1339	$1612 \pm 140$
$A_{217}^{\text{dustEE}}$	0.654	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.9764	$0.947^{+0.021}_{-0.025}$	$F_{\text{AP}}(0.57)$	0.666	$0.737 \pm 0.040$
$H_0$	71.1	$53.7^{+4.8}_{-12}$	$Y_{\text{P}}$	0.24613	$0.24544 \pm 0.00061$	$f\sigma_8(0.57)$	0.459	$0.321^{+0.044}_{-0.10}$
$\Omega_\Lambda$	0.727	$0.37^{+0.35}_{-0.16}$	$Y_{\text{P}}^{\text{BBN}}$	0.24746	$0.24677 \pm 0.00061$	$\sigma_8(0.57)$	0.612	$0.360^{+0.052}_{-0.16}$
$\Omega_{\text{m}}$	0.273	$0.63^{+0.16}_{-0.35}$	$10^5 \text{D}/\text{H}$	2.294	$2.58^{+0.25}_{-0.28}$	$\chi_{\text{lowEB}}^2$	5430.91	$5431.9 \pm 1.4$
$\Omega_{\text{m}} h^2$	0.1382	$0.164 \pm 0.014$	Age/Gyr	13.60	$14.58^{+0.72}_{-0.29}$	$\chi_{\text{plikEE}}^2$	750.25	$758.7 \pm 4.4$
$\Omega_\nu h^2$	0.0000	$< 0.0354$	$z_*$	1087.36	$1090.9 \pm 2.6$	$\chi_{\text{prior}}^2$	3.71	$7.6 \pm 3.4$
$\Omega_{\text{m}} h^3$	0.0983	$0.0870^{+0.0043}_{-0.0090}$	$r_*$	144.64	$142.6^{+1.2}_{-1.7}$	$\chi_{\text{CMB}}^2$	6181.16	$6190.7 \pm 4.5$

Best-fit  $\chi_{\text{eff}}^2 = 6184.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 6198.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.31$ ;  $R - 1 = 0.00866$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.91 ( $\Delta$  0.18) plik\_dx11dr2\_HM\_v18\_EE: 750.25 ( $\Delta$  -0.50)

### 7.13 base\_mnu\_plikHM\_TT\_lowl\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022192	$0.02216 \pm 0.00028$	$\Omega_m$	0.3472	$0.354^{+0.033}_{-0.048}$	$100\theta_*$	1.04118	$1.04118 \pm 0.00050$
$\Omega_c h^2$	0.11879	$0.1189 \pm 0.0026$	$\Omega_m h^2$	0.14523	$0.1457^{+0.0038}_{-0.0044}$	$D_A/\text{Gpc}$	13.907	$13.902 \pm 0.053$
$100\theta_{\text{MC}}$	1.04082	$1.04082 \pm 0.00054$	$\Omega_\nu h^2$	0.00426	$0.0046^{+0.0022}_{-0.0036}$	$z_{\text{drag}}$	1059.47	$1059.43 \pm 0.51$
$\tau$	0.1014	$0.0999 \pm 0.031$	$\Omega_m h^3$	0.09393	$0.0937^{+0.0019}_{-0.0015}$	$r_{\text{drag}}$	147.52	$147.48 \pm 0.55$
$\Sigma m_\nu [\text{eV}]$	0.396	$0.43^{+0.21}_{-0.34}$	$\sigma_8$	0.7674	$0.762^{+0.049}_{-0.037}$	$k_D$	0.14034	$0.14038 \pm 0.00055$
$\ln(10^{10} A_s)$	3.132	$3.129 \pm 0.057$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.4512 \pm 0.0095$	$100\theta_D$	0.160973	$0.16099 \pm 0.00028$
$n_s$	0.9680	$0.9668 \pm 0.0078$	$\sigma_8 \Omega_m^{0.25}$	0.5891	$0.586^{+0.021}_{-0.016}$	$z_{\text{eq}}$	3369	$3372 \pm 58$
$y_{\text{cal}}$	1.00010	$1.0002 \pm 0.0025$	$\sigma_8/h^{0.5}$	0.9542	$0.949^{+0.040}_{-0.029}$	$k_{\text{eq}}$	0.010286	$0.01030 \pm 0.00018$
$A_{217}^{\text{CIB}}$	67.5	$64.3 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.499	$2.504^{+0.048}_{-0.055}$	$100\theta_{\text{eq}}$	0.8192	$0.819 \pm 0.011$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$z_{\text{re}}$	12.10	$11.9^{+3.1}_{-2.3}$	$100\theta_{\text{s,eq}}$	0.4526	$0.4526 \pm 0.0057$
$A_{143}^{\text{tSZ}}$	7.20	$5.1 \pm 2.0$	$10^9 A_s$	2.293	$2.29 \pm 0.13$	$r_{\text{drag}}/D_V(0.57)$	0.06981	$0.0697 \pm 0.0018$
$A_{100}^{\text{PS}}$	253.2	$260 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8717	$1.872 \pm 0.015$	$H(0.57)$	91.39	$91.3 \pm 1.3$
$A_{143}^{\text{PS}}$	39.4	$45 \pm 8$	$D_{40}$	1230.8	$1233 \pm 13$	$D_A(0.57)$	1430.9	$1435^{+38}_{-46}$
$A_{143 \times 217}^{\text{PS}}$	33.1	$39^{+10}_{-10}$	$D_{220}$	5711.1	$5715 \pm 41$	$F_{\text{AP}}(0.57)$	0.6848	$0.6861^{+0.0084}_{-0.011}$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$D_{810}$	2531.6	$2532 \pm 14$	$f\sigma_8(0.57)$	0.4591	$0.456^{+0.019}_{-0.012}$
$A^{\text{kSZ}}$	0.02	$< 4.81$	$D_{1420}$	814.9	$814.5 \pm 5.1$	$\sigma_8(0.57)$	0.5650	$0.560^{+0.043}_{-0.034}$
$A_{100}^{\text{dustTT}}$	7.43	$7.4 \pm 1.9$	$D_{2000}$	230.08	$229.8 \pm 2.0$	$f_{2000}^{143}$	30.02	$30.6 \pm 3.1$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$n_{\text{s},0.002}$	0.9680	$0.9668 \pm 0.0078$	$f_{2000}^{143 \times 217}$	32.73	$33.0 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	17.95	$17.2 \pm 4.1$	$Y_{\text{P}}$	0.245313	$0.24529 \pm 0.00013$	$f_{2000}^{217}$	106.32	$106.5 \pm 2.2$
$A_{217}^{\text{dustTT}}$	82.4	$81.8 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246639	$0.24662 \pm 0.00013$	$\chi_{\text{lensing}}^2$	8.63	$9.9 \pm 1.8$
$c_{100}$	0.99784	$0.99786 \pm 0.00077$	$10^5 D/H$	2.625	$2.633 \pm 0.053$	$\chi_{\text{lowl}}^2$	13.99	$14.4 \pm 1.3$
$c_{217}$	0.99607	$0.9960 \pm 0.0014$	Age/Gyr	13.982	$14.00^{+0.14}_{-0.17}$	$\chi_{\text{plik}}^2$	765.5	$779.3 \pm 5.6$
$H_0$	64.67	$64.4^{+3.0}_{-2.7}$	$z_*$	1090.10	$1090.19 \pm 0.57$	$\chi_{\text{prior}}^2$	2.27	$7.4 \pm 3.5$
$\Omega_\Lambda$	0.6528	$0.646^{+0.048}_{-0.033}$	$r_*$	144.79	$144.74 \pm 0.58$	$\chi_{\text{CMB}}^2$	788.1	$803.7 \pm 5.6$

Best-fit  $\chi_{\text{eff}}^2 = 790.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 811.08$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.25$ ;  $R - 1 = 0.00848$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 8.63 ( $\Delta$  -0.74) commander\_rc2\_v1.1\_l2\_29\_B: 13.99 ( $\Delta$  0.70) plik\_dx11dr2\_HM\_v18\_TT: 765.52 ( $\Delta$  -0.54)



## 7.14 base\_mnu\_plikHM\_TT\_lowl\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022317	$0.02233^{+0.00021}_{-0.00025}$	$\Omega_\nu h^2$	0.00136	$< 0.00231$	$k_D$	0.140160	$0.14006 \pm 0.00047$
$\Omega_c h^2$	0.11781	$0.1173^{+0.0022}_{-0.0018}$	$\Omega_m h^3$	0.09566	$0.09537^{+0.00093}_{-0.00067}$	$100\theta_D$	0.160929	$0.16093 \pm 0.00027$
$100\theta_{MC}$	1.041090	$1.04115 \pm 0.00043$	$\sigma_8$	0.8099	$0.805^{+0.019}_{-0.014}$	$z_{eq}$	3348.7	$3336^{+48}_{-42}$
$\tau$	0.0794	$0.089^{+0.026}_{-0.036}$	$\sigma_8 \Omega_m^{0.5}$	0.4506	$0.4487 \pm 0.0079$	$k_{eq}$	0.010221	$0.01018^{+0.00014}_{-0.00013}$
$\Sigma m_\nu$ [eV]	0.127	$< 0.215$	$\sigma_8 \Omega_m^{0.25}$	0.6041	$0.601^{+0.012}_{-0.0096}$	$100\theta_{eq}$	0.8230	$0.8257^{+0.0079}_{-0.0098}$
$\ln(10^{10} A_s)$	3.087	$3.105^{+0.049}_{-0.067}$	$\sigma_8/h^{0.5}$	0.9849	$0.980^{+0.019}_{-0.015}$	$100\theta_{s,eq}$	0.45450	$0.4559^{+0.0041}_{-0.0050}$
$n_s$	0.9699	$0.9714^{+0.0058}_{-0.0071}$	$\langle d^2 \rangle^{1/2}$	2.4557	$2.465 \pm 0.035$	$r_{drag}/D_V(0.57)$	0.071724	$0.07165 \pm 0.00049$
$y_{cal}$	1.00006	$1.0001 \pm 0.0025$	$z_{re}$	10.06	$10.8 \pm 2.6$	$H(0.57)$	92.914	$92.78^{+0.49}_{-0.38}$
$A_{217}^{CIB}$	67.4	$63.8 \pm 6.5$	$10^9 A_s$	2.192	$2.24^{+0.10}_{-0.15}$	$D_A(0.57)$	1388.3	$1391.1^{+9.9}_{-12}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8702	$1.867^{+0.015}_{-0.013}$	$F_{AP}(0.57)$	0.67553	$0.6759^{+0.0022}_{-0.0025}$
$A_{143}^{tSZ}$	7.16	$5.1 \pm 2.0$	$D_{40}$	1225.8	$1227 \pm 11$	$f\sigma_8(0.57)$	0.4717	$0.4696^{+0.0081}_{-0.0067}$
$A_{100}^{PS}$	254.4	$258 \pm 28$	$D_{220}$	5718.3	$5719 \pm 40$	$\sigma_8(0.57)$	0.6035	$0.599^{+0.015}_{-0.011}$
$A_{143}^{PS}$	39.0	$43 \pm 8$	$D_{810}$	2531.1	$2530 \pm 14$	$f_{2000}^{143}$	29.81	$29.8 \pm 3.0$
$A_{143 \times 217}^{PS}$	32.4	$38^{+10}_{-10}$	$D_{1420}$	815.0	$815.1 \pm 5.1$	$f_{2000}^{143 \times 217}$	32.38	$32.2 \pm 2.1$
$A_{217}^{PS}$	96.9	$97 \pm 10$	$D_{2000}$	230.40	$230.5 \pm 1.9$	$f_{2000}^{217}$	105.93	$105.8^{+2.3}_{-2.0}$
$A^{kSZ}$	0.00	$< 4.65$	$n_{s,0.002}$	0.9699	$0.9714^{+0.0058}_{-0.0071}$	$\chi^2_{lensing}$	9.22	$9.97 \pm 1.8$
$A_{100}^{dustTT}$	7.41	$7.4 \pm 1.9$	$Y_P$	0.245369	$0.24538 \pm 0.00010$	$\chi^2_{lowl}$	13.34	$13.57 \pm 0.88$
$A_{143}^{dustTT}$	9.12	$9.0 \pm 1.8$	$Y_P^{BBN}$	0.246696	$0.24670 \pm 0.00010$	$\chi^2_{plik}$	766.3	$779.7 \pm 5.6$
$A_{143 \times 217}^{dustTT}$	17.62	$17.2 \pm 4.0$	$10^5 D/H$	2.6013	$2.598^{+0.046}_{-0.041}$	$\chi^2_{6DF}$	0.0155	$0.08 \pm 0.11$
$A_{217}^{dustTT}$	81.9	$81.8 \pm 7.2$	Age/Gyr	13.818	$13.835^{+0.043}_{-0.059}$	$\chi^2_{MGS}$	1.34	$1.34 \pm 0.62$
$c_{100}$	0.99790	$0.99787 \pm 0.00077$	$z_*$	1089.799	$1089.74^{+0.42}_{-0.38}$	$\chi^2_{DR11CMass}$	2.40	$3.04 \pm 0.92$
$c_{217}$	0.99596	$0.9959 \pm 0.0015$	$r_*$	145.036	$145.15 \pm 0.43$	$\chi^2_{DR11LOWZ}$	0.538	$0.82 \pm 0.74$
$H_0$	67.61	$67.44^{+0.81}_{-0.71}$	$100\theta_*$	1.041320	$1.04140 \pm 0.00044$	$\chi^2_{prior}$	2.08	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6904	$0.6889^{+0.0099}_{-0.0086}$	$D_A/Gpc$	13.9281	$13.938 \pm 0.040$	$\chi^2_{CMB}$	788.8	$803.2 \pm 5.4$
$\Omega_m$	0.3096	$0.3111^{+0.0086}_{-0.0099}$	$z_{drag}$	1059.666	$1059.66 \pm 0.47$	$\chi^2_{BAO}$	4.30	$5.3 \pm 1.4$
$\Omega_m h^2$	0.14149	$0.1414 \pm 0.0013$	$r_{drag}$	147.727	$147.84 \pm 0.43$			

Best-fit  $\chi^2_{eff} = 795.19$ ;  $\Delta\chi^2_{eff} = 0.06$ ;  $\bar{\chi}^2_{eff} = 815.84$ ;  $\Delta\bar{\chi}^2_{eff} = 0.57$ ;  $R - 1 = 0.02005$   
 $\chi^2_{eff}$ : BAO - 6DF: 0.01 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.13) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.54 ( $\Delta$  0.11) CMB - smica\_g30\_ftl\_full\_pp: 9.22 ( $\Delta$  -0.14) commander\_rc2\_v1.1\_l2\_29\_B: 13.34 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_TT: 766.25 ( $\Delta$  0.20)

## 7.15 base\_mnu\_plikHM\_TT\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022327	$0.02235^{+0.00021}_{-0.00025}$	$\Omega_m h^3$	0.09592	$0.09549^{+0.00088}_{-0.00063}$	$z_{\text{eq}}$	3351.5	$3334^{+47}_{-40}$
$\Omega_c h^2$	0.11792	$0.1171^{+0.0021}_{-0.0017}$	$\sigma_8$	0.8161	$0.808^{+0.017}_{-0.013}$	$k_{\text{eq}}$	0.010229	$0.01018^{+0.00014}_{-0.00012}$
$100\theta_{\text{MC}}$	1.041132	$1.04118 \pm 0.00043$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.4484 \pm 0.0077$	$100\theta_{\text{eq}}$	0.8225	$0.8261^{+0.0075}_{-0.0095}$
$\tau$	0.0758	$0.088^{+0.025}_{-0.035}$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.602^{+0.011}_{-0.0093}$	$100\theta_{\text{s,eq}}$	0.45423	$0.4561^{+0.0039}_{-0.0049}$
$\Sigma m_\nu$ [eV]	0.090	$< 0.195$	$\sigma_8/h^{0.5}$	0.9902	$0.982^{+0.018}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.071920	$0.07180 \pm 0.00047$
$\ln(10^{10} A_s)$	3.081	$3.103^{+0.046}_{-0.066}$	$\langle d^2 \rangle^{1/2}$	2.4544	$2.463 \pm 0.034$	$H(0.57)$	93.105	$92.90^{+0.45}_{-0.36}$
$n_s$	0.9697	$0.9717^{+0.0056}_{-0.0070}$	$z_{\text{re}}$	9.73	$10.7^{+2.4}_{-2.8}$	$D_A(0.57)$	1383.6	$1388.0^{+9.1}_{-11}$
$y_{\text{cal}}$	0.999997	$1.0001 \pm 0.0025$	$10^9 A_s$	2.177	$2.231^{+0.096}_{-0.15}$	$F_{\text{AP}}(0.57)$	0.67463	$0.6752^{+0.0020}_{-0.0023}$
$A_{217}^{\text{CIB}}$	67.4	$63.7 \pm 6.5$	$10^9 A_s e^{-2\tau}$	1.8708	$1.867^{+0.014}_{-0.013}$	$f\sigma_8(0.57)$	0.4738	$0.4704^{+0.0077}_{-0.0066}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.2	$1226 \pm 11$	$\sigma_8(0.57)$	0.6087	$0.602^{+0.014}_{-0.011}$
$A_{143}^{\text{tSZ}}$	7.17	$5.1^{+2.2}_{-2.0}$	$D_{220}$	5718.0	$5720 \pm 40$	$f_{2000}^{143}$	29.67	$29.7 \pm 3.0$
$A_{100}^{\text{PS}}$	254.2	$257 \pm 28$	$D_{810}$	2531.2	$2530 \pm 14$	$f_{2000}^{143 \times 217}$	32.29	$32.1 \pm 2.1$
$A_{143}^{\text{PS}}$	38.6	$43 \pm 8$	$D_{1420}$	815.0	$815.2 \pm 5.0$	$f_{2000}^{217}$	105.88	$105.7^{+2.3}_{-2.0}$
$A_{143 \times 217}^{\text{PS}}$	32.1	$38^{+10}_{-10}$	$D_{2000}$	230.44	$230.6 \pm 1.8$	$\chi_{\text{lensing}}^2$	9.50	$10.0 \pm 1.8$
$A_{217}^{\text{PS}}$	96.6	$97 \pm 10$	$n_{\text{s},0.002}$	0.9697	$0.9717^{+0.0056}_{-0.0070}$	$\chi_{\text{lowl}}^2$	13.34	$13.51 \pm 0.86$
$A^{\text{kSZ}}$	0.00	$< 4.62$	$Y_{\text{P}}$	0.245374	$0.24538 \pm 0.00010$	$\chi_{\text{plik}}^2$	766.0	$779.7 \pm 5.6$
$A_{100}^{\text{dustTT}}$	7.38	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246700	$0.24671 \pm 0.00010$	$\chi_{\text{H070p6}}^2$	0.648	$0.83 \pm 0.37$
$A_{143}^{\text{dustTT}}$	9.17	$9.0 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.5995	$2.595^{+0.046}_{-0.040}$	$\chi_{\text{JLA}}^2$	706.613	$706.72 \pm 0.22$
$A_{143 \times 217}^{\text{dustTT}}$	17.84	$17.1 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.7965	$13.823^{+0.039}_{-0.054}$	$\chi_{6\text{DF}}^2$	0.00099	$0.056 \pm 0.079$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.2$	$z_*$	1089.793	$1089.71^{+0.41}_{-0.37}$	$\chi_{\text{MGS}}^2$	1.61	$1.52 \pm 0.62$
$c_{100}$	0.99789	$0.99787 \pm 0.00078$	$r_*$	145.006	$145.18 \pm 0.41$	$\chi_{\text{DR11CMass}}^2$	2.429	$2.92 \pm 0.74$
$c_{217}$	0.99604	$0.9959 \pm 0.0015$	$100\theta_*$	1.041341	$1.04142 \pm 0.00044$	$\chi_{\text{DR11LOWZ}}^2$	0.318	$0.61 \pm 0.60$
$H_0$	67.93	$67.66^{+0.74}_{-0.66}$	$D_A/\text{Gpc}$	13.9249	$13.940 \pm 0.039$	$\chi_{\text{prior}}^2$	2.12	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6940	$0.6916^{+0.0092}_{-0.0079}$	$z_{\text{drag}}$	1059.666	$1059.69 \pm 0.46$	$\chi_{\text{CMB}}^2$	788.9	$803.3 \pm 5.5$
$\Omega_m$	0.3060	$0.3084^{+0.0079}_{-0.0092}$	$r_{\text{drag}}$	147.696	$147.86 \pm 0.42$	$\chi_{\text{BAO}}^2$	4.36	$5.1 \pm 1.1$
$\Omega_m h^2$	0.14121	$0.1411^{+0.0012}_{-0.0013}$	$k_{\text{D}}$	0.140199	$0.14005 \pm 0.00046$			
$\Omega_\nu h^2$	0.00096	$< 0.00210$	$100\theta_{\text{D}}$	0.160921	$0.16091 \pm 0.00027$			

Best-fit  $\chi_{\text{eff}}^2 = 1502.59$ ;  $\Delta\chi_{\text{eff}}^2 = 0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 1523.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.68$ ;  $R - 1 = 0.02283$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  0.00) MGS: 1.61 ( $\Delta$  0.00) DR11CMass: 2.43 ( $\Delta$  -0.01) DR11LOWZ: 0.32 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.50 ( $\Delta$  0.07) commander\_rc2.v1.1\_l2\_29\_B: 13.34 ( $\Delta$  0.01) plik\_dx11dr2\_HM.v18\_TT: 766.01 ( $\Delta$  0.11) Hubble - H070p6: 0.65 ( $\Delta$  0.02) SN - JLA December\_2013: 706.61 ( $\Delta$  0.01)

## 7.16 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022207	$0.02219 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	$10^5 \text{D/H}$	2.6221	$2.625 \pm 0.033$
$\Omega_c h^2$	0.11945	$0.1195 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	Age/Gyr	13.958	$13.97^{+0.11}_{-0.16}$
$100\theta_{\text{MC}}$	1.040687	$1.04068 \pm 0.00034$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.339 \pm 0.080$	$z_*$	1090.123	$1090.17 \pm 0.35$
$\tau$	0.0911	$0.090 \pm 0.026$	$A_{217}^{\text{dust}TE}$	1.684	$1.67 \pm 0.26$	$r_*$	144.632	$144.60 \pm 0.35$
$\Sigma m_\nu [\text{eV}]$	0.340	$< 0.463$	$c_{100}$	0.99816	$0.99814 \pm 0.00077$	$100\theta_*$	1.041026	$1.04102 \pm 0.00031$
$\ln(10^{10} A_s)$	3.1144	$3.112 \pm 0.049$	$c_{217}$	0.99608	$0.9961 \pm 0.0014$	$D_A/\text{Gpc}$	13.8932	$13.890 \pm 0.033$
$n_s$	0.9652	$0.9646 \pm 0.0053$	$H_0$	64.90	$64.7^{+2.6}_{-1.9}$	$z_{\text{drag}}$	1059.551	$1059.54 \pm 0.32$
$y_{\text{cal}}$	1.00006	$1.0002 \pm 0.0024$	$\Omega_\Lambda$	0.6550	$0.651^{+0.039}_{-0.024}$	$r_{\text{drag}}$	147.351	$147.32 \pm 0.34$
$A_{217}^{\text{CIB}}$	67.9	$64.6 \pm 6.6$	$\Omega_m$	0.3450	$0.349^{+0.024}_{-0.039}$	$k_D$	0.140512	$0.14055 \pm 0.00035$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.14532	$0.1456^{+0.0026}_{-0.0034}$	$100\theta_D$	0.160929	$0.16092 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	7.30	$5.3 \pm 1.9$	$\Omega_\nu h^2$	0.00366	$< 0.00498$	$z_{\text{eq}}$	3385.3	$3386 \pm 35$
$A_{100}^{\text{PS}}$	258.3	$262 \pm 28$	$\Omega_m h^3$	0.09432	$0.0942^{+0.0018}_{-0.0011}$	$k_{\text{eq}}$	0.010335	$0.01034 \pm 0.00011$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8$	0.7746	$0.770^{+0.046}_{-0.029}$	$100\theta_{\text{eq}}$	0.8161	$0.8162 \pm 0.0066$
$A_{143 \times 217}^{\text{PS}}$	33.1	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.4535 \pm 0.0071$	$100\theta_{\text{s,eq}}$	0.45097	$0.4510 \pm 0.0034$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.5936	$0.591^{+0.020}_{-0.013}$	$r_{\text{drag}}/D_V(0.57)$	0.06990	$0.0698^{+0.0017}_{-0.0013}$
$A^{\text{kSZ}}$	0.00	$< 4.61$	$\sigma_8/h^{0.5}$	0.9614	$0.956^{+0.037}_{-0.024}$	$H(0.57)$	91.57	$91.5^{+1.3}_{-1.0}$
$A_{100}^{\text{dust}TT}$	7.44	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.4936	$2.496^{+0.041}_{-0.049}$	$D_A(0.57)$	1427.0	$1430^{+27}_{-40}$
$A_{143}^{\text{dust}TT}$	9.02	$9.0 \pm 1.8$	$z_{\text{re}}$	11.22	$11.0^{+2.6}_{-2.2}$	$F_{\text{AP}}(0.57)$	0.6843	$0.6851^{+0.0060}_{-0.0091}$
$A_{143 \times 217}^{\text{dust}TT}$	17.54	$17.2 \pm 4.1$	$10^9 A_s$	2.252	$2.25 \pm 0.11$	$f\sigma_8(0.57)$	0.4622	$0.459^{+0.017}_{-0.0099}$
$A_{217}^{\text{dust}TT}$	81.7	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8768	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.5705	$0.567^{+0.040}_{-0.026}$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0814 \pm 0.0057$	$D_{40}$	1236.4	$1237 \pm 12$	$f_{2000}^{143}$	29.98	$30.3 \pm 2.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04905	$0.0489 \pm 0.0050$	$D_{220}$	5723.6	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	32.73	$32.9 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0984	$0.0997 \pm 0.032$	$D_{810}$	2533.7	$2534 \pm 13$	$f_{2000}^{217}$	106.29	$106.4 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1003 \pm 0.0068$	$D_{1420}$	814.70	$814.8 \pm 4.7$	$\chi^2_{\text{lensing}}$	9.10	$10.0 \pm 1.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2246	$0.225 \pm 0.047$	$D_{2000}$	229.93	$229.9 \pm 1.6$	$\chi^2_{\text{lowl}}$	14.34	$14.6 \pm 1.1$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$n_{s,0.002}$	0.9652	$0.9646 \pm 0.0053$	$\chi^2_{\text{plik}}$	2434.8	$2453.8 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1415	$0.140 \pm 0.038$	$Y_P$	0.245321	$0.245311 \pm 0.000079$	$\chi^2_{\text{prior}}$	7.1	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1308	$0.131 \pm 0.029$	$Y_P^{\text{BBN}}$	0.246647	$0.246637 \pm 0.000079$	$\chi^2_{\text{CMB}}$	2458.2	$2478.4 \pm 6.7$

Best-fit  $\chi^2_{\text{eff}} = 2465.39$ ;  $\Delta\chi^2_{\text{eff}} = -0.18$ ;  $\bar{\chi}^2_{\text{eff}} = 2497.84$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.34$ ;  $R - 1 = 0.01148$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.10 ( $\Delta$  -0.66) commander\_rc2\_v1.1\_l2\_29\_B: 14.34 ( $\Delta$  0.63) plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.80 ( $\Delta$  -0.21)

## 7.17 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022289	$0.02230 \pm 0.00014$	$A_{143 \times 217}^{\text{dustTE}}$	0.334	$0.333 \pm 0.081$	$100\theta_*$	1.041071	$1.04112 \pm 0.00030$
$\Omega_c h^2$	0.11924	$0.1185 \pm 0.0013$	$A_{217}^{\text{dustTE}}$	1.651	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.8987	$13.914 \pm 0.026$
$100\theta_{\text{MC}}$	1.040888	$1.04090 \pm 0.00029$	$c_{100}$	0.99818	$0.99811^{+0.00085}_{-0.00075}$	$z_{\text{drag}}$	1059.704	$1059.68 \pm 0.30$
$\tau$	0.0597	$0.073^{+0.017}_{-0.023}$	$c_{217}$	0.99608	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.388	$147.55 \pm 0.27$
$\Sigma m_\nu [\text{eV}]$	0.033	$< 0.140$	$H_0$	67.84	$67.41^{+0.74}_{-0.61}$	$k_D$	0.140487	$0.14034 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0520	$3.076^{+0.032}_{-0.043}$	$\Omega_\Lambda$	0.6917	$0.6873^{+0.0093}_{-0.0075}$	$100\theta_D$	0.160893	$0.16090 \pm 0.00017$
$n_s$	0.96595	$0.9674 \pm 0.0046$	$\Omega_m$	0.3083	$0.3127^{+0.0075}_{-0.0093}$	$z_{\text{eq}}$	3382.1	$3366 \pm 28$
$y_{\text{cal}}$	0.99987	$1.0001 \pm 0.0024$	$\Omega_m h^2$	0.14188	$0.1420 \pm 0.0011$	$k_{\text{eq}}$	0.010322	$0.010273 \pm 0.000086$
$A_{217}^{\text{CIB}}$	67.2	$64.2 \pm 6.6$	$\Omega_\nu h^2$	0.00036	$< 0.00151$	$100\theta_{\text{eq}}$	0.8166	$0.8198^{+0.0051}_{-0.0059}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^3$	0.09626	$0.09574^{+0.00064}_{-0.00043}$	$100\theta_{\text{s,eq}}$	0.45118	$0.4528^{+0.0026}_{-0.0030}$
$A_{143}^{\text{tSZ}}$	7.25	$5.3 \pm 1.9$	$\sigma_8$	0.8201	$0.810^{+0.015}_{-0.012}$	$r_{\text{drag}}/D_V(0.57)$	0.071760	$0.07154^{+0.00049}_{-0.00042}$
$A_{100}^{\text{PS}}$	256.2	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4553	$0.4529 \pm 0.0063$	$H(0.57)$	93.145	$92.86^{+0.40}_{-0.32}$
$A_{143}^{\text{PS}}$	39.4	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6111	$0.6056^{+0.0092}_{-0.0078}$	$D_A(0.57)$	1384.2	$1390.8^{+8.5}_{-11}$
$A_{143 \times 217}^{\text{PS}}$	34.3	$39 \pm 10$	$\sigma_8/h^{0.5}$	0.9957	$0.987^{+0.015}_{-0.013}$	$F_{\text{AP}}(0.57)$	0.67520	$0.6763^{+0.0019}_{-0.0023}$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4504	$2.458 \pm 0.029$	$f\sigma_8(0.57)$	0.4756	$0.4722^{+0.0065}_{-0.0057}$
$A^{\text{kSZ}}$	0.01	$< 4.47$	$z_{\text{re}}$	8.23	$9.4^{+1.8}_{-2.0}$	$\sigma_8(0.57)$	0.6107	$0.603^{+0.012}_{-0.0095}$
$A_{100}^{\text{dustTT}}$	7.50	$7.4 \pm 1.9$	$10^9 A_s$	2.116	$2.169^{+0.067}_{-0.094}$	$f_{2000}^{143}$	29.59	$29.8 \pm 2.7$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8776	$1.874 \pm 0.012$	$f_{2000}^{143 \times 217}$	32.41	$32.4 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.83	$17.3 \pm 4.1$	$D_{40}$	1228.9	$1231 \pm 11$	$f_{2000}^{217}$	105.93	$105.9 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.2	$82.0 \pm 7.4$	$D_{220}$	5722.2	$5725 \pm 37$	$\chi_{\text{lensing}}^2$	10.06	$10.4 \pm 2.0$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0818 \pm 0.0057$	$D_{810}$	2533.6	$2533 \pm 13$	$\chi_{\text{lowl}}^2$	13.65	$13.78 \pm 0.86$
$A_{100 \times 143}^{\text{dustEE}}$	0.04888	$0.0491 \pm 0.0049$	$D_{1420}$	814.82	$814.8 \pm 4.6$	$\chi_{\text{plik}}^2$	2435.1	$2453.6 \pm 6.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0989	$0.0996 \pm 0.033$	$D_{2000}$	230.16	$230.2 \pm 1.5$	$\chi_{6\text{DF}}^2$	0.0103	$0.09 \pm 0.11$
$A_{143}^{\text{dustEE}}$	0.1004	$0.1008 \pm 0.0067$	$n_{\text{s},0.002}$	0.96595	$0.9674 \pm 0.0046$	$\chi_{\text{MGS}}^2$	1.41	$1.20 \pm 0.53$
$A_{143 \times 217}^{\text{dustEE}}$	0.2255	$0.224 \pm 0.047$	$Y_{\text{P}}$	0.245357	$0.245362^{+0.000072}_{-0.000062}$	$\chi_{\text{DR11CMass}}^2$	2.41	$3.05 \pm 0.93$
$A_{217}^{\text{dustEE}}$	0.653	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.246689^{+0.000072}_{-0.000063}$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.95 \pm 0.74$
$A_{100}^{\text{dustTE}}$	0.1416	$0.142 \pm 0.038$	$10^5 D/H$	2.6066	$2.604 \pm 0.027$	$\chi_{\text{prior}}^2$	7.0	$19.7 \pm 5.6$
$A_{100 \times 143}^{\text{dustTE}}$	0.1326	$0.132 \pm 0.029$	$\text{Age/Gyr}$	13.7857	$13.821^{+0.033}_{-0.046}$	$\chi_{\text{CMB}}^2$	2458.8	$2477.8 \pm 6.6$
$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.301^{+0.093}_{-0.083}$	$z_*$	1089.951	$1089.88 \pm 0.26$	$\chi_{\text{BAO}}^2$	4.31	$5.3 \pm 1.4$
$A_{143}^{\text{dustTE}}$	0.155	$0.153 \pm 0.055$	$r_*$	144.696	$144.86 \pm 0.27$			

Best-fit  $\chi_{\text{eff}}^2 = 2470.12$ ;  $\Delta\chi_{\text{eff}}^2 = 0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 2502.70$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.83$ ;  $R - 1 = 0.03617$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.48 ( $\Delta$  -0.12) CMB - smica\_g30\_ftl\_full\_pp: 10.06 ( $\Delta$  0.19) comman-

der\_rc2\_v1.1\_l2\_29\_B: 13.65 ( $\Delta$  0.01) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.11 ( $\Delta$  0.12)

## 7.18 base\_mnu\_plikHM\_TTTEEE\_lowl\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022280	$0.02232 \pm 0.00014$	$A_{217}^{\text{dustTE}}$	1.672	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.666	$1059.70^{+0.32}_{-0.29}$
$\Omega_c h^2$	0.11919	$0.1184^{+0.0013}_{-0.0011}$	$c_{100}$	0.99813	$0.99812^{+0.00086}_{-0.00075}$	$r_{\text{drag}}$	147.414	$147.57 \pm 0.27$
$100\theta_{\text{MC}}$	1.040901	$1.04092 \pm 0.00029$	$c_{217}$	0.99608	$0.9960 \pm 0.0014$	$k_D$	0.140453	$0.14033 \pm 0.00029$
$\tau$	0.0573	$0.072^{+0.016}_{-0.022}$	$H_0$	68.06	$67.60^{+0.67}_{-0.57}$	$100\theta_D$	0.160907	$0.16088 \pm 0.00017$
$\Sigma m_\nu$ [eV]	0.002	$< 0.122$	$\Omega_\Lambda$	0.6946	$0.6896^{+0.0085}_{-0.0069}$	$z_{\text{eq}}$	3380.6	$3363^{+29}_{-26}$
$\ln(10^{10} A_s)$	3.0470	$3.074^{+0.030}_{-0.041}$	$\Omega_m$	0.3054	$0.3104^{+0.0069}_{-0.0085}$	$k_{\text{eq}}$	0.010318	$0.010265^{+0.000088}_{-0.000079}$
$n_s$	0.96579	$0.9677 \pm 0.0045$	$\Omega_m h^2$	0.14149	$0.14178^{+0.00097}_{-0.0011}$	$100\theta_{\text{eq}}$	0.8168	$0.8202^{+0.0048}_{-0.0058}$
$y_{\text{cal}}$	0.99986	$1.0001 \pm 0.0025$	$\Omega_\nu h^2$	0.00003	$< 0.00131$	$100\theta_{s,\text{eq}}$	0.45130	$0.4530^{+0.0024}_{-0.0030}$
$A_{217}^{\text{CIB}}$	67.9	$64.2 \pm 6.6$	$\Omega_m h^3$	0.096306	$0.09583^{+0.00059}_{-0.00039}$	$r_{\text{drag}}/D_V(0.57)$	0.071905	$0.07166^{+0.00045}_{-0.00040}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8231	$0.812^{+0.014}_{-0.011}$	$H(0.57)$	93.250	$92.95^{+0.38}_{-0.29}$
$A_{143}^{\text{tSZ}}$	7.32	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.4525 \pm 0.0062$	$D_A(0.57)$	1381.2	$1388.2^{+7.9}_{-9.6}$
$A_{100}^{\text{PS}}$	256.9	$261 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6119	$0.6063^{+0.0089}_{-0.0076}$	$F_{\text{AP}}(0.57)$	0.67448	$0.6757^{+0.0018}_{-0.0021}$
$A_{143}^{\text{PS}}$	38.4	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9976	$0.988^{+0.014}_{-0.012}$	$f\sigma_8(0.57)$	0.4759	$0.4727^{+0.0062}_{-0.0056}$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4484	$2.456 \pm 0.029$	$\sigma_8(0.57)$	0.6133	$0.605^{+0.011}_{-0.0090}$
$A_{217}^{\text{PS}}$	96.3	$97 \pm 10$	$z_{\text{re}}$	7.98	$9.3^{+1.7}_{-1.9}$	$f_{2000}^{143}$	29.74	$29.7 \pm 2.7$
$A^{\text{kSZ}}$	0.00	$< 4.45$	$10^9 A_s$	2.105	$2.165^{+0.063}_{-0.090}$	$f_{2000}^{143 \times 217}$	32.51	$32.3 \pm 1.9$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8773	$1.874 \pm 0.012$	$f_{2000}^{217}$	106.05	$105.8 \pm 1.9$
$A_{143}^{\text{dustTT}}$	9.13	$9.0 \pm 1.8$	$D_{40}$	1228.2	$1230 \pm 11$	$\chi_{\text{lensing}}^2$	9.95	$10.4 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.65	$17.3 \pm 4.1$	$D_{220}$	5722.3	$5726 \pm 37$	$\chi_{\text{lowl}}^2$	13.62	$13.73 \pm 0.84$
$A_{217}^{\text{dustTT}}$	81.7	$81.9^{+7.9}_{-7.2}$	$D_{810}$	2533.1	$2532 \pm 13$	$\chi_{\text{plik}}^2$	2435.1	$2453.6 \pm 6.8$
$A_{100}^{\text{dustEE}}$	0.0814	$0.0818 \pm 0.0057$	$D_{1420}$	814.54	$814.9 \pm 4.6$	$\chi_{\text{H070p6}}^2$	0.584	$0.85 \pm 0.34$
$A_{100 \times 143}^{\text{dustEE}}$	0.04905	$0.0492 \pm 0.0049$	$D_{2000}$	230.04	$230.3 \pm 1.5$	$\chi_{\text{JLA}}^2$	706.602	$706.76 \pm 0.23$
$A_{100 \times 217}^{\text{dustEE}}$	0.0989	$0.0997 \pm 0.033$	$n_{s,0.002}$	0.96579	$0.9677 \pm 0.0045$	$\chi_{6\text{DF}}^2$	0.0009	$0.060 \pm 0.084$
$A_{143}^{\text{dustEE}}$	0.1004	$0.1008 \pm 0.0067$	$Y_{\text{P}}$	0.245353	$0.245369^{+0.000070}_{-0.000061}$	$\chi_{\text{MGS}}^2$	1.61	$1.34 \pm 0.52$
$A_{143 \times 217}^{\text{dustEE}}$	0.2258	$0.225 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.246695^{+0.000070}_{-0.000061}$	$\chi_{\text{DR11CMass}}^2$	2.444	$2.87 \pm 0.69$
$A_{217}^{\text{dustEE}}$	0.653	$0.66 \pm 0.13$	$10^5 D/H$	2.6083	$2.601 \pm 0.027$	$\chi_{\text{DR11LOWZ}}^2$	0.323	$0.74 \pm 0.61$
$A_{100}^{\text{dustTE}}$	0.1404	$0.142 \pm 0.038$	Age/Gyr	13.7754	$13.811^{+0.029}_{-0.043}$	$\chi_{\text{prior}}^2$	7.1	$19.7 \pm 5.6$
$A_{100 \times 143}^{\text{dustTE}}$	0.1314	$0.132 \pm 0.029$	$z_*$	1089.958	$1089.85 \pm 0.25$	$\chi_{\text{CMB}}^2$	2458.6	$2477.8 \pm 6.6$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.301^{+0.094}_{-0.083}$	$r_*$	144.717	$144.88 \pm 0.27$	$\chi_{\text{BAO}}^2$	4.38	$5.0 \pm 1.0$
$A_{143}^{\text{dustTE}}$	0.156	$0.153 \pm 0.055$	$100\theta_*$	1.041061	$1.04113 \pm 0.00029$			
$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.333 \pm 0.081$	$D_A/\text{Gpc}$	13.9009	$13.916 \pm 0.025$			

Best-fit  $\chi_{\text{eff}}^2 = 3177.29$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 3210.11$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.81$ ;  $R - 1 = 0.04365$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMASS: 2.44 ( $\Delta$  0.03) DR11LOWZ: 0.32 ( $\Delta$  -0.16) CMB - smica\_g30\_ftl\_full\_pp: 9.95 ( $\Delta$  0.14) commander\_rc2\_v1.1\_l2\_29\_B: 13.62 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.06 ( $\Delta$  0.05) Hubble - H070p6: 0.58 ( $\Delta$  -0.14) SN - JLA December\_2013: 706.60 ( $\Delta$  -0.06)

## 7.19 base\_mnu\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02211 \pm 0.00026$	$\Omega_m$	0.2992	$0.344^{+0.024}_{-0.046}$	$100\theta_*$	1.041279	$1.04102 \pm 0.00048$
$\Omega_c h^2$	0.11815	$0.1199^{+0.0023}_{-0.0026}$	$\Omega_m h^2$	0.14049	$0.1451^{+0.0031}_{-0.0046}$	$D_A/\text{Gpc}$	13.922	$13.890^{+0.053}_{-0.047}$
$100\theta_{\text{MC}}$	1.04112	$1.04070 \pm 0.00053$	$\Omega_\nu h^2$	0.00004	$< 0.00397$	$z_{\text{drag}}$	1059.666	$1059.36 \pm 0.50$
$\tau$	0.0637	$0.075 \pm 0.018$	$\Omega_m h^3$	0.09628	$0.0945^{+0.0018}_{-0.0010}$	$r_{\text{drag}}$	147.66	$147.35^{+0.55}_{-0.50}$
$\Sigma m_\nu [\text{eV}]$	0.003	$< 0.369$	$\sigma_8$	0.8248	$0.776^{+0.047}_{-0.025}$	$k_D$	0.14021	$0.14044 \pm 0.00053$
$\ln(10^{10} A_s)$	3.0571	$3.083 \pm 0.035$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.4536 \pm 0.0089$	$100\theta_D$	0.160939	$0.16105 \pm 0.00028$
$n_s$	0.9692	$0.9640 \pm 0.0068$	$\sigma_8 \Omega_m^{0.25}$	0.6100	$0.593^{+0.018}_{-0.011}$	$z_{\text{eq}}$	3357	$3393^{+50}_{-56}$
$y_{\text{cal}}$	1.00003	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	0.9963	$0.961^{+0.035}_{-0.020}$	$k_{\text{eq}}$	0.010244	$0.01036^{+0.00015}_{-0.00017}$
$A_{217}^{\text{CIB}}$	67.4	$64.9 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4429	$2.471^{+0.032}_{-0.041}$	$100\theta_{\text{eq}}$	0.8215	$0.8146 \pm 0.0098$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	8.59	$9.7^{+1.9}_{-1.7}$	$100\theta_{\text{s,eq}}$	0.4537	$0.4503 \pm 0.0050$
$A_{143}^{\text{tSZ}}$	7.35	$4.9 \pm 1.9$	$10^9 A_s$	2.127	$2.184 \pm 0.076$	$r_{\text{drag}}/D_V(0.57)$	0.07228	$0.0701^{+0.0021}_{-0.0014}$
$A_{100}^{\text{PS}}$	251.1	$262 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8721	$1.879 \pm 0.014$	$H(0.57)$	93.43	$91.8^{+1.5}_{-1.0}$
$A_{143}^{\text{PS}}$	38.1	$46 \pm 8$	$D_{40}$	1221.7	$1232 \pm 13$	$D_A(0.57)$	1375.2	$1423^{+27}_{-47}$
$A_{143 \times 217}^{\text{PS}}$	32.1	$39^{+10}_{-10}$	$D_{220}$	5715.9	$5715 \pm 41$	$F_{\text{AP}}(0.57)$	0.6729	$0.6838^{+0.0062}_{-0.011}$
$A_{217}^{\text{PS}}$	96.8	$97 \pm 10$	$D_{810}$	2531.8	$2534 \pm 14$	$f\sigma_8(0.57)$	0.4752	$0.461^{+0.016}_{-0.0085}$
$A^{\text{kSZ}}$	0.00	$< 5.17$	$D_{1420}$	815.1	$814.3 \pm 5.2$	$\sigma_8(0.57)$	0.6162	$0.572^{+0.042}_{-0.023}$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$D_{2000}$	230.35	$229.5 \pm 1.9$	$f_{2000}^{143}$	29.64	$31.2 \pm 3.0$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9692	$0.9640 \pm 0.0068$	$f_{2000}^{143 \times 217}$	32.30	$33.5 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	17.68	$17.2 \pm 4.2$	$Y_{\text{P}}$	0.245364	$0.24527 \pm 0.00012$	$f_{2000}^{217}$	105.91	$106.9 \pm 2.1$
$A_{217}^{\text{dustTT}}$	81.8	$81.8 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246691	$0.24660 \pm 0.00012$	$\chi^2_{\text{lensing}}$	9.38	$9.5 \pm 1.3$
$c_{100}$	0.99789	$0.99788 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.604	$2.641 \pm 0.051$	$\chi^2_{\text{lowTEB}}$	10494.67	$10496.6 \pm 1.9$
$c_{217}$	0.99593	$0.9961 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.762	$13.941^{+0.097}_{-0.17}$	$\chi^2_{\text{plik}}$	766.3	$779.8 \pm 5.5$
$H_0$	68.53	$65.2^{+3.2}_{-2.0}$	$z_*$	1089.84	$1090.29^{+0.50}_{-0.60}$	$\chi^2_{\text{prior}}$	2.23	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.7008	$0.656^{+0.046}_{-0.024}$	$r_*$	144.97	$144.60^{+0.58}_{-0.51}$	$\chi^2_{\text{CMB}}$	11270.3	$11285.9 \pm 5.6$

Best-fit  $\chi^2_{\text{eff}} = 11272.57$ ;  $\Delta\chi^2_{\text{eff}} = 0.14$ ;  $\bar{\chi}^2_{\text{eff}} = 11293.42$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.12$ ;  $R - 1 = 0.00753$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.38 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.67 ( $\Delta$  -0.18) plik\_dx11dr2\_HM\_v18.TT: 766.29 ( $\Delta$  -0.04)

## 7.20 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022254	$0.02219 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.304 \pm 0.084$	$10^5 \text{D/H}$	2.6132	$2.625 \pm 0.033$
$\Omega_c h^2$	0.11935	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	Age/Gyr	13.834	$13.915^{+0.071}_{-0.14}$
$100\theta_{\text{MC}}$	1.040805	$1.04069^{+0.00037}_{-0.00034}$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.080$	$z_*$	1090.013	$1090.17^{+0.32}_{-0.39}$
$\tau$	0.0667	$0.074 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.667	$1.68 \pm 0.25$	$r_*$	144.686	$144.56 \pm 0.35$
$\Sigma m_\nu [\text{eV}]$	0.117	$< 0.315$	$c_{100}$	0.99815	$0.99815 \pm 0.00078$	$100\theta_*$	1.041032	$1.04098 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0662	$3.081 \pm 0.033$	$c_{217}$	0.99607	$0.9961 \pm 0.0014$	$D_A/\text{Gpc}$	13.8984	$13.887 \pm 0.033$
$n_s$	0.9654	$0.9637 \pm 0.0051$	$H_0$	67.01	$65.6^{+2.5}_{-1.4}$	$z_{\text{drag}}$	1059.628	$1059.54 \pm 0.32$
$y_{\text{cal}}$	1.00002	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6818	$0.662^{+0.034}_{-0.017}$	$r_{\text{drag}}$	147.391	$147.29 \pm 0.34$
$A_{217}^{\text{CIB}}$	68.1	$64.8 \pm 6.6$	$\Omega_m$	0.3182	$0.338^{+0.017}_{-0.034}$	$k_D$	0.140465	$0.14055 \pm 0.00035$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14286	$0.1447^{+0.0022}_{-0.0034}$	$100\theta_D$	0.160924	$0.16095 \pm 0.00018$
$A_{143}^{\text{tSZ}}$	7.25	$5.2 \pm 1.9$	$\Omega_\nu h^2$	0.00126	$< 0.00339$	$z_{\text{eq}}$	3383.8	$3394 \pm 34$
$A_{100}^{\text{PS}}$	258.1	$263 \pm 27$	$\Omega_m h^3$	0.09573	$0.0949^{+0.0015}_{-0.00075}$	$k_{\text{eq}}$	0.010328	$0.01036 \pm 0.00011$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8$	0.8074	$0.783^{+0.040}_{-0.021}$	$100\theta_{\text{eq}}$	0.8162	$0.8145 \pm 0.0065$
$A_{143 \times 217}^{\text{PS}}$	32.8	$40^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4554	$0.4544 \pm 0.0071$	$100\theta_{\text{s,eq}}$	0.45099	$0.4501 \pm 0.0033$
$A_{217}^{\text{PS}}$	96.5	$97 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.597^{+0.017}_{-0.010}$	$r_{\text{drag}}/D_V(0.57)$	0.07123	$0.0703^{+0.0016}_{-0.00098}$
$A^{\text{kSZ}}$	0.00	$< 4.67$	$\sigma_8/h^{0.5}$	0.9863	$0.967^{+0.032}_{-0.018}$	$H(0.57)$	92.69	$92.0^{+1.2}_{-0.71}$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.4568	$2.472^{+0.030}_{-0.036}$	$D_A(0.57)$	1396.2	$1417^{+20}_{-37}$
$A_{143}^{\text{dust}TT}$	9.05	$9.0 \pm 1.8$	$z_{\text{re}}$	8.92	$9.6 \pm 1.6$	$F_{\text{AP}}(0.57)$	0.6777	$0.6825^{+0.0045}_{-0.0083}$
$A_{143 \times 217}^{\text{dust}TT}$	17.50	$17.2 \pm 4.2$	$10^9 A_s$	2.146	$2.180^{+0.069}_{-0.081}$	$f\sigma_8(0.57)$	0.4723	$0.464^{+0.014}_{-0.0076}$
$A_{217}^{\text{dust}TT}$	81.5	$81.8 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8781	$1.880 \pm 0.012$	$\sigma_8(0.57)$	0.5995	$0.578^{+0.036}_{-0.018}$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0812 \pm 0.0056$	$D_{40}$	1232.4	$1236 \pm 12$	$f_{2000}^{143}$	30.00	$30.5 \pm 2.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04916	$0.0488 \pm 0.0050$	$D_{220}$	5723.1	$5728 \pm 39$	$f_{2000}^{143 \times 217}$	32.70	$33.0 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0989	$0.100 \pm 0.032$	$D_{810}$	2533.9	$2536 \pm 14$	$f_{2000}^{217}$	106.19	$106.6 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1002 \pm 0.0069$	$D_{1420}$	814.64	$814.8 \pm 4.8$	$\chi^2_{\text{lensing}}$	9.69	$9.8 \pm 1.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2243	$0.224 \pm 0.047$	$D_{2000}$	230.00	$229.8 \pm 1.6$	$\chi^2_{\text{lowTEB}}$	10495.48	$10496.7 \pm 1.7$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	0.9654	$0.9637 \pm 0.0051$	$\chi^2_{\text{plik}}$	2435.1	$2454.3 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	$Y_{\text{P}}$	0.245342	$0.245311^{+0.000086}_{-0.000078}$	$\chi^2_{\text{prior}}$	7.1	$19.4 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1326	$0.131 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.246637 \pm 0.000080$	$\chi^2_{\text{CMB}}$	12940.2	$12960.8 \pm 6.7$

Best-fit  $\chi^2_{\text{eff}} = 12947.35$ ;  $\Delta\chi^2_{\text{eff}} = 0.17$ ;  $\bar{\chi}^2_{\text{eff}} = 12980.23$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.12$ ;  $R - 1 = 0.00848$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.69 ( $\Delta$  -0.09) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.48 ( $\Delta$  0.19) plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.05 ( $\Delta$  0.14)



## 7.21 base\_mnu\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022278	$0.02228 \pm 0.00020$	$\Omega_\nu h^2$	0.00001	$< 0.00113$	$k_D$	0.140547	$0.14035 \pm 0.00048$
$\Omega_c h^2$	0.11953	$0.1188 \pm 0.0015$	$\Omega_m h^3$	0.09637	$0.09592^{+0.00070}_{-0.00055}$	$100\theta_D$	0.160901	$0.16093 \pm 0.00026$
$100\theta_{MC}$	1.040925	$1.04099 \pm 0.00043$	$\sigma_8$	0.8427	$0.825^{+0.023}_{-0.018}$	$z_{eq}$	3388.8	$3371 \pm 34$
$\tau$	0.0784	$0.082 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4670	$0.460 \pm 0.012$	$k_{eq}$	0.010343	$0.01029 \pm 0.00010$
$\Sigma m_\nu$ [eV]	0.001	$< 0.105$	$\sigma_8 \Omega_m^{0.25}$	0.6274	$0.616^{+0.016}_{-0.014}$	$100\theta_{eq}$	0.8154	$0.8189^{+0.0061}_{-0.0069}$
$\ln(10^{10} A_s)$	3.0905	$3.096 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0223	$1.004^{+0.026}_{-0.022}$	$100\theta_{s,eq}$	0.45054	$0.4523^{+0.0032}_{-0.0035}$
$n_s$	0.96659	$0.9678 \pm 0.0048$	$\langle d^2 \rangle^{1/2}$	2.5040	$2.488 \pm 0.045$	$r_{drag}/D_V(0.57)$	0.071806	$0.07163 \pm 0.00045$
$y_{cal}$	1.00031	$1.0004 \pm 0.0025$	$z_{re}$	9.99	$10.3^{+1.8}_{-1.6}$	$H(0.57)$	93.219	$92.96^{+0.38}_{-0.33}$
$A_{217}^{CIB}$	65.9	$63.6 \pm 6.6$	$10^9 A_s$	2.199	$2.212 \pm 0.081$	$D_A(0.57)$	1382.5	$1388.4 \pm 9.1$
$\xi^{tSZ \times CIB}$	0.16	—	$10^9 A_s e^{-2\tau}$	1.8799	$1.876 \pm 0.012$	$F_{AP}(0.57)$	0.67492	$0.6759 \pm 0.0021$
$A_{143}^{tSZ}$	7.04	$5.2 \pm 1.9$	$D_{40}$	1235.0	$1234 \pm 14$	$f\sigma_8(0.57)$	0.4877	$0.480^{+0.012}_{-0.010}$
$A_{100}^{PS}$	250.9	$258 \pm 28$	$D_{220}$	5718.2	$5721 \pm 40$	$\sigma_8(0.57)$	0.6275	$0.614^{+0.017}_{-0.014}$
$A_{143}^{PS}$	40.8	$43 \pm 8$	$D_{810}$	2534.4	$2533 \pm 14$	$f_{2000}^{143}$	29.13	$29.7 \pm 2.9$
$A_{143 \times 217}^{PS}$	37.0	$39 \pm 10$	$D_{1420}$	815.0	$815.0 \pm 5.0$	$f_{2000}^{143 \times 217}$	31.96	$32.2 \pm 2.1$
$A_{217}^{PS}$	99.0	$97 \pm 10$	$D_{2000}$	230.73	$230.6 \pm 1.8$	$f_{2000}^{217}$	105.53	$105.8 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.50$	$n_{s,0.002}$	0.96659	$0.9678 \pm 0.0048$	$\chi_{lowTEB}^2$	10496.49	$10497.3 \pm 2.5$
$A_{100}^{dustTT}$	7.42	$7.4 \pm 1.9$	$Y_P$	0.245353	$0.24535^{+0.00010}_{-0.000090}$	$\chi_{plik}^2$	763.1	$777.5 \pm 5.8$
$A_{143}^{dustTT}$	9.03	$9.0 \pm 1.8$	$Y_P^{BBN}$	0.246679	$0.24668^{+0.00010}_{-0.000091}$	$\chi_{6DF}^2$	0.0060	$0.073 \pm 0.094$
$A_{143 \times 217}^{dustTT}$	17.79	$17.1 \pm 4.2$	$10^5 D/H$	2.6086	$2.608 \pm 0.039$	$\chi_{MGS}^2$	1.47	$1.31 \pm 0.57$
$A_{217}^{dustTT}$	82.1	$81.8 \pm 7.5$	Age/Gyr	13.7762	$13.808^{+0.035}_{-0.045}$	$\chi_{DR11CMAS}^2$	2.415	$2.97 \pm 0.81$
$c_{100}$	0.99793	$0.99789 \pm 0.00077$	$z_*$	1089.991	$1089.92 \pm 0.32$	$\chi_{DR11LOWZ}^2$	0.43	$0.81 \pm 0.67$
$c_{217}$	0.99591	$0.9959 \pm 0.0014$	$r_*$	144.629	$144.82 \pm 0.36$	$\chi_{prior}^2$	1.92	$7.3 \pm 3.6$
$H_0$	67.95	$67.57 \pm 0.65$	$100\theta_*$	1.041082	$1.04119 \pm 0.00043$	$\chi_{CMB}^2$	11259.6	$11274.8 \pm 5.6$
$\Omega_\Lambda$	0.6929	$0.6889 \pm 0.0082$	$D_A/\text{Gpc}$	13.8922	$13.909 \pm 0.035$	$\chi_{BAO}^2$	4.32	$5.2 \pm 1.2$
$\Omega_m$	0.3071	$0.3111 \pm 0.0082$	$z_{drag}$	1059.704	$1059.64 \pm 0.46$			
$\Omega_m h^2$	0.14182	$0.1420 \pm 0.0012$	$r_{drag}$	147.323	$147.52 \pm 0.39$			

Best-fit  $\chi_{eff}^2 = 11265.84$ ;  $\Delta\chi_{eff}^2 = -0.59$ ;  $\bar{\chi}_{eff}^2 = 11287.27$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.91$ ;  $R - 1 = 0.00894$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.19) DR11CMAS: 2.42 ( $\Delta$  -0.04) DR11LOWZ: 0.43 ( $\Delta$  -0.19) CMB - lowl.SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10496.49  
( $\Delta$  0.07) plik\_dx11dr2\_HM\_v18\_TT: 763.12 ( $\Delta$  -0.48)

## 7.22 base\_mnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022300	$0.02230 \pm 0.00020$	$\Omega_\nu h^2$	0.00003	$< 0.00106$	$k_D$	0.140552	$0.14035 \pm 0.00047$
$\Omega_c h^2$	0.11940	$0.1186 \pm 0.0014$	$\Omega_m h^3$	0.09641	$0.09597^{+0.00067}_{-0.00054}$	$100\theta_D$	0.160882	$0.16092 \pm 0.00026$
$100\theta_{MC}$	1.040967	$1.04101 \pm 0.00043$	$\sigma_8$	0.8428	$0.826^{+0.022}_{-0.018}$	$z_{eq}$	3386.2	$3368 \pm 34$
$\tau$	0.0792	$0.083 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.460 \pm 0.011$	$k_{eq}$	0.010335	$0.01028 \pm 0.00010$
$\Sigma m_\nu$ [eV]	0.0028	$< 0.0984$	$\sigma_8 \Omega_m^{0.25}$	0.6270	$0.616^{+0.016}_{-0.014}$	$100\theta_{eq}$	0.8159	$0.8194 \pm 0.0063$
$\ln(10^{10} A_s)$	3.0920	$3.097 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0219	$1.005^{+0.025}_{-0.022}$	$100\theta_{s,eq}$	0.45082	$0.4526 \pm 0.0033$
$n_s$	0.96699	$0.9681 \pm 0.0048$	$\langle d^2 \rangle^{1/2}$	2.5034	$2.488 \pm 0.045$	$r_{drag}/D_V(0.57)$	0.071856	$0.07171 \pm 0.00045$
$y_{cal}$	1.00029	$1.0004 \pm 0.0025$	$z_{re}$	10.06	$10.3^{+1.8}_{-1.6}$	$H(0.57)$	93.257	$93.02^{+0.37}_{-0.32}$
$A_{217}^{CIB}$	65.7	$63.6 \pm 6.7$	$10^9 A_s$	2.202	$2.214^{+0.079}_{-0.088}$	$D_A(0.57)$	1381.5	$1386.8 \pm 8.9$
$\xi^{tSZ \times CIB}$	0.12	—	$10^9 A_s e^{-2\tau}$	1.8794	$1.876 \pm 0.012$	$F_{AP}(0.57)$	0.67470	$0.6755 \pm 0.0021$
$A_{143}^{tSZ}$	7.11	$5.2 \pm 2.0$	$D_{40}$	1234.6	$1234 \pm 14$	$f\sigma_8(0.57)$	0.4876	$0.480^{+0.011}_{-0.010}$
$A_{100}^{PS}$	250.6	$257 \pm 28$	$D_{220}$	5719.5	$5722 \pm 40$	$\sigma_8(0.57)$	0.6278	$0.615^{+0.017}_{-0.013}$
$A_{143}^{PS}$	39.6	$43 \pm 8$	$D_{810}$	2534.4	$2533 \pm 14$	$f_{2000}^{143}$	28.97	$29.6 \pm 2.9$
$A_{143 \times 217}^{PS}$	35.5	$39 \pm 10$	$D_{1420}$	815.23	$815.1 \pm 5.0$	$f_{2000}^{143 \times 217}$	31.78	$32.1 \pm 2.1$
$A_{217}^{PS}$	99.0	$97 \pm 10$	$D_{2000}$	230.84	$230.6 \pm 1.8$	$f_{2000}^{217}$	105.47	$105.8 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.44$	$n_{s,0.002}$	0.96699	$0.9681 \pm 0.0048$	$\chi_{lowTEB}^2$	10496.51	$10497.3 \pm 2.5$
$A_{100}^{dustTT}$	7.37	$7.4 \pm 1.9$	$Y_P$	0.245362	$0.24536^{+0.00010}_{-0.000089}$	$\chi_{plik}^2$	763.1	$777.4 \pm 5.8$
$A_{143}^{dustTT}$	9.02	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246689	$0.24669^{+0.00010}_{-0.000089}$	$\chi_{H070p6}^2$	0.602	$0.81 \pm 0.34$
$A_{143 \times 217}^{dustTT}$	17.65	$17.1 \pm 4.2$	$10^5 D/H$	2.6045	$2.605 \pm 0.039$	$\chi_{6DF}^2$	0.0029	$0.061 \pm 0.082$
$A_{217}^{dustTT}$	82.1	$81.8 \pm 7.5$	Age/Gyr	13.7725	$13.802^{+0.034}_{-0.043}$	$\chi_{MGS}^2$	1.54	$1.41 \pm 0.58$
$c_{100}$	0.99793	$0.99790 \pm 0.00077$	$z_*$	1089.950	$1089.89 \pm 0.32$	$\chi_{DR11CMass}^2$	2.424	$2.92 \pm 0.73$
$c_{217}$	0.99584	$0.9959 \pm 0.0015$	$r_*$	144.646	$144.84 \pm 0.36$	$\chi_{DR11LOWZ}^2$	0.373	$0.71 \pm 0.61$
$H_0$	68.02	$67.68 \pm 0.64$	$100\theta_*$	1.041122	$1.04121 \pm 0.00043$	$\chi_{prior}^2$	1.94	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6937	$0.6903 \pm 0.0081$	$D_A/\text{Gpc}$	13.8933	$13.910 \pm 0.035$	$\chi_{CMB}^2$	11259.6	$11274.8 \pm 5.6$
$\Omega_m$	0.3063	$0.3097 \pm 0.0081$	$z_{drag}$	1059.742	$1059.67 \pm 0.46$	$\chi_{BAO}^2$	4.34	$5.1 \pm 1.1$
$\Omega_m h^2$	0.14173	$0.1418 \pm 0.0012$	$r_{drag}$	147.333	$147.53 \pm 0.38$			

Best-fit  $\chi_{eff}^2 = 11266.47$ ;  $\bar{\chi}_{eff}^2 = 11287.94$ ;  $R - 1 = 0.00873$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.42 DR11LOWZ: 0.37 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.51 plik\_dx11dr2\_HM\_v18\_TT: 763.08  
Hubble - H070p6: 0.60

### 7.23 base\_mnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022278	$0.02231 \pm 0.00020$	$\Omega_\nu h^2$	0.00001	$< 0.00103$	$k_D$	0.140463	$0.14034 \pm 0.00047$
$\Omega_c h^2$	0.11924	$0.1186 \pm 0.0014$	$\Omega_m h^3$	0.09633	$0.09599^{+0.00066}_{-0.00054}$	$100\theta_D$	0.160918	$0.16091 \pm 0.00026$
$100\theta_{MC}$	1.040969	$1.04102 \pm 0.00042$	$\sigma_8$	0.8415	$0.827^{+0.022}_{-0.018}$	$z_{eq}$	3381.8	$3366 \pm 33$
$\tau$	0.0783	$0.083 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.460 \pm 0.011$	$k_{eq}$	0.010321	$0.01027 \pm 0.00010$
$\Sigma m_\nu$ [eV]	0.0007	$< 0.0955$	$\sigma_8 \Omega_m^{0.25}$	0.6256	$0.616^{+0.016}_{-0.014}$	$100\theta_{eq}$	0.8167	$0.8198 \pm 0.0062$
$\ln(10^{10} A_s)$	3.0895	$3.097 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0199	$1.005^{+0.025}_{-0.021}$	$100\theta_{s,eq}$	0.45122	$0.4528 \pm 0.0032$
$n_s$	0.96698	$0.9684 \pm 0.0047$	$\langle d^2 \rangle^{1/2}$	2.4989	$2.487 \pm 0.045$	$r_{drag}/D_V(0.57)$	0.071906	$0.07175 \pm 0.00044$
$y_{cal}$	1.00032	$1.0004 \pm 0.0025$	$z_{re}$	9.98	$10.3^{+1.8}_{-1.6}$	$H(0.57)$	93.259	$93.05^{+0.36}_{-0.32}$
$A_{217}^{CIB}$	66.8	$63.5 \pm 6.6$	$10^9 A_s$	2.197	$2.215^{+0.079}_{-0.088}$	$D_A(0.57)$	1381.0	$1386.0 \pm 8.7$
$\xi^{tSZ \times CIB}$	0.03	—	$10^9 A_s e^{-2\tau}$	1.8782	$1.875 \pm 0.012$	$F_{AP}(0.57)$	0.67449	$0.6753 \pm 0.0020$
$A_{143}^{tSZ}$	7.17	$5.2 \pm 2.0$	$D_{40}$	1233.8	$1233 \pm 14$	$f\sigma_8(0.57)$	0.4865	$0.480^{+0.011}_{-0.010}$
$A_{100}^{PS}$	252.1	$257 \pm 28$	$D_{220}$	5718.1	$5723 \pm 40$	$\sigma_8(0.57)$	0.6270	$0.616^{+0.016}_{-0.013}$
$A_{143}^{PS}$	38.6	$43 \pm 8$	$D_{810}$	2533.5	$2533 \pm 14$	$f_{2000}^{143}$	29.39	$29.6 \pm 2.9$
$A_{143 \times 217}^{PS}$	32.7	$39 \pm 10$	$D_{1420}$	814.75	$815.1 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.06	$32.1 \pm 2.1$
$A_{217}^{PS}$	97.4	$97 \pm 10$	$D_{2000}$	230.60	$230.7 \pm 1.8$	$f_{2000}^{217}$	105.75	$105.7 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.43$	$n_{s,0.002}$	0.96698	$0.9684 \pm 0.0047$	$\chi_{lowTEB}^2$	10496.36	$10497.3 \pm 2.6$
$A_{100}^{dustTT}$	7.44	$7.4 \pm 1.9$	$Y_P$	0.245352	$0.24536^{+0.00010}_{-0.000089}$	$\chi_{plik}^2$	763.1	$777.4 \pm 5.8$
$A_{143}^{dustTT}$	9.01	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246678	$0.24669^{+0.00010}_{-0.000089}$	$\chi_{H070p6}^2$	0.582	$0.77 \pm 0.32$
$A_{143 \times 217}^{dustTT}$	17.63	$17.1 \pm 4.2$	$10^5 D/H$	2.6088	$2.604 \pm 0.039$	$\chi_{JLA}^2$	706.602	$706.73 \pm 0.21$
$A_{217}^{dustTT}$	82.1	$81.8 \pm 7.5$	Age/Gyr	13.7738	$13.800^{+0.034}_{-0.042}$	$\chi_{6DF}^2$	0.00095	$0.054 \pm 0.074$
$c_{100}$	0.99792	$0.99790 \pm 0.00077$	$z_*$	1089.965	$1089.87 \pm 0.31$	$\chi_{MGS}^2$	1.61	$1.46 \pm 0.58$
$c_{217}$	0.99596	$0.9959 \pm 0.0015$	$r_*$	144.706	$144.86 \pm 0.36$	$\chi_{DR11CMAS}^2$	2.443	$2.88 \pm 0.67$
$H_0$	68.07	$67.74 \pm 0.62$	$100\theta_*$	1.041125	$1.04122 \pm 0.00042$	$\chi_{DR11LOWZ}^2$	0.322	$0.64 \pm 0.57$
$\Omega_\Lambda$	0.6946	$0.6911 \pm 0.0079$	$D_A/\text{Gpc}$	13.8990	$13.912 \pm 0.034$	$\chi_{prior}^2$	2.06	$7.3 \pm 3.5$
$\Omega_m$	0.3054	$0.3089 \pm 0.0079$	$z_{drag}$	1059.666	$1059.68 \pm 0.46$	$\chi_{CMB}^2$	11259.5	$11274.7 \pm 5.6$
$\Omega_m h^2$	0.14152	$0.1417 \pm 0.0012$	$r_{drag}$	147.403	$147.55 \pm 0.38$	$\chi_{BAO}^2$	4.37	$5.0 \pm 1.0$

Best-fit  $\chi_{eff}^2 = 11973.10$ ;  $\bar{\chi}_{eff}^2 = 11994.57$ ;  $R - 1 = 0.00922$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMAS: 2.44 DR11LOWZ: 0.32 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.36 plik\_dx11dr2\_HM\_v18\_TT: 763.11  
Hubble - H070p6: 0.58 SN - JLA December\_2013: 706.60

## 7.24 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022295	$0.02229 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.081$	$100\theta_*$	1.041009	$1.04103 \pm 0.00030$
$\Omega_c h^2$	0.11950	$0.1193 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.675	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.8927	$13.898 \pm 0.024$
$100\theta_{\text{MC}}$	1.040852	$1.04083 \pm 0.00030$	$c_{100}$	0.99821	$0.99815 \pm 0.00077$	$z_{\text{drag}}$	1059.704	$1059.70 \pm 0.30$
$\tau$	0.0806	$0.082 \pm 0.017$	$c_{217}$	0.99590	$0.9959 \pm 0.0014$	$r_{\text{drag}}$	147.316	$147.38 \pm 0.26$
$\Sigma m_\nu [\text{eV}]$	0.0004	$< 0.0808$	$H_0$	67.95	$67.53^{+0.60}_{-0.53}$	$k_D$	0.140571	$0.14050 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0957	$3.098 \pm 0.033$	$\Omega_\Lambda$	0.6929	$0.6879 \pm 0.0072$	$100\theta_D$	0.160868	$0.16088 \pm 0.00018$
$n_s$	0.96633	$0.9660 \pm 0.0042$	$\Omega_m$	0.3071	$0.3121 \pm 0.0072$	$z_{\text{eq}}$	3388.5	$3383 \pm 25$
$y_{\text{cal}}$	1.00024	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14180	$0.1423 \pm 0.0010$	$k_{\text{eq}}$	0.010342	$0.010324 \pm 0.000076$
$A_{217}^{\text{CIB}}$	64.0	$63.7 \pm 6.6$	$\Omega_\nu h^2$	0.000004	$< 0.000869$	$100\theta_{\text{eq}}$	0.81543	$0.8165 \pm 0.0047$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.41	—	$\Omega_m h^3$	0.096356	$0.09606^{+0.00047}_{-0.00035}$	$100\theta_{s,\text{eq}}$	0.45055	$0.4511 \pm 0.0024$
$A_{143}^{\text{tSZ}}$	6.94	$5.4 \pm 1.9$	$\sigma_8$	0.8446	$0.832^{+0.018}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.071801	$0.07156 \pm 0.00039$
$A_{100}^{\text{PS}}$	251.1	$259 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4681	$0.4644 \pm 0.0091$	$H(0.57)$	93.217	$92.97^{+0.32}_{-0.25}$
$A_{143}^{\text{PS}}$	44.0	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6288	$0.621 \pm 0.012$	$D_A(0.57)$	1382.5	$1388.7^{+7.1}_{-8.5}$
$A_{143 \times 217}^{\text{PS}}$	44.3	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0246	$1.012 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.67492	$0.6762 \pm 0.0018$
$A_{217}^{\text{PS}}$	102.3	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5109	$2.502 \pm 0.039$	$f\sigma_8(0.57)$	0.4888	$0.4837 \pm 0.0087$
$A^{\text{kSZ}}$	0.00	$< 4.02$	$z_{\text{re}}$	10.19	$10.3^{+1.6}_{-1.4}$	$\sigma_8(0.57)$	0.6290	$0.619^{+0.014}_{-0.012}$
$A_{100}^{\text{dust}TT}$	7.43	$7.4 \pm 1.9$	$10^9 A_s$	2.210	$2.216 \pm 0.073$	$f_{2000}^{143}$	28.42	$29.2 \pm 2.7$
$A_{143}^{\text{dust}TT}$	9.02	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8814	$1.880 \pm 0.011$	$f_{2000}^{143 \times 217}$	31.69	$32.0 \pm 1.9$
$A_{143 \times 217}^{\text{dust}TT}$	18.04	$17.0 \pm 4.1$	$D_{40}$	1237.8	$1240 \pm 13$	$f_{2000}^{217}$	105.19	$105.7 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.5	$81.6 \pm 7.4$	$D_{220}$	5726.3	$5732 \pm 39$	$\chi_{\text{lowTEB}}^2$	10496.94	$10497.7 \pm 2.3$
$A_{100}^{\text{dust}EE}$	0.0812	$0.0814 \pm 0.0057$	$D_{810}$	2536.1	$2536 \pm 13$	$\chi_{\text{plik}}^2$	2431.4	$2450.2 \pm 6.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0490 \pm 0.0050$	$D_{1420}$	815.47	$815.1 \pm 4.7$	$\chi_{6\text{DF}}^2$	0.0062	$0.073 \pm 0.091$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.0997 \pm 0.032$	$D_{2000}$	230.91	$230.6 \pm 1.6$	$\chi_{\text{MGS}}^2$	1.473	$1.21 \pm 0.48$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1003 \pm 0.0069$	$n_{s,0.002}$	0.96633	$0.9660 \pm 0.0042$	$\chi_{\text{DR11CMass}}^2$	2.418	$2.93 \pm 0.75$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.224 \pm 0.046$	$Y_P$	0.245360	$0.245358^{+0.000067}_{-0.000061}$	$\chi_{\text{DR11LOWZ}}^2$	0.43	$0.88 \pm 0.63$
$A_{217}^{\text{dust}EE}$	0.647	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246686	$0.246684^{+0.000068}_{-0.000061}$	$\chi_{\text{prior}}^2$	6.7	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1407	$0.141 \pm 0.038$	$10^5 D/H$	2.6055	$2.606 \pm 0.027$	$\chi_{\text{CMB}}^2$	12928.4	$12948.0 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.132 \pm 0.029$	$\text{Age/Gyr}$	13.7766	$13.804^{+0.025}_{-0.034}$	$\chi_{\text{BAO}}^2$	4.33	$5.1 \pm 1.1$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.302 \pm 0.085$	$z_*$	1089.968	$1089.95 \pm 0.24$			
$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$r_*$	144.624	$144.68 \pm 0.25$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.83$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.41$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.06$ ;  $R - 1 = 0.01159$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.26) DR11CMass: 2.42 ( $\Delta$  -0.08) DR11LOWZ: 0.43 ( $\Delta$  -0.25) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10496.94

( $\Delta$  -0.48) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.41 ( $\Delta$  -0.12)

## 7.25 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022295	$0.02230 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.339 \pm 0.081$	$100\theta_*$	1.040993	$1.04104 \pm 0.00029$
$\Omega_c h^2$	0.11947	$0.1192 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8937	$13.900 \pm 0.024$
$100\theta_{\text{MC}}$	1.040826	$1.04084 \pm 0.00030$	$c_{100}$	0.99819	$0.99815 \pm 0.00076$	$z_{\text{drag}}$	1059.704	$1059.72 \pm 0.30$
$\tau$	0.0806	$0.082 \pm 0.017$	$c_{217}$	0.99590	$0.9959 \pm 0.0014$	$r_{\text{drag}}$	147.324	$147.39 \pm 0.26$
$\Sigma m_\nu [\text{eV}]$	0.0030	$< 0.0753$	$H_0$	67.95	$67.61^{+0.59}_{-0.51}$	$k_D$	0.140562	$0.14050 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0951	$3.098 \pm 0.033$	$\Omega_\Lambda$	0.6929	$0.6890^{+0.0076}_{-0.0067}$	$100\theta_D$	0.160866	$0.16087 \pm 0.00018$
$n_s$	0.96619	$0.9662 \pm 0.0042$	$\Omega_m$	0.3071	$0.3110^{+0.0067}_{-0.0076}$	$z_{\text{eq}}$	3387.8	$3381 \pm 25$
$y_{\text{cal}}$	1.00014	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14180	$0.1421 \pm 0.0010$	$k_{\text{eq}}$	0.010340	$0.010318 \pm 0.000075$
$A_{217}^{\text{CIB}}$	64.9	$63.6 \pm 6.5$	$\Omega_\nu h^2$	0.000032	$< 0.000810$	$100\theta_{\text{eq}}$	0.81555	$0.8169 \pm 0.0047$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^3$	0.096354	$0.09609^{+0.00045}_{-0.00034}$	$100\theta_{\text{s,eq}}$	0.45061	$0.4513 \pm 0.0024$
$A_{143}^{\text{tSZ}}$	7.16	$5.4 \pm 1.9$	$\sigma_8$	0.8440	$0.832^{+0.017}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.071803	$0.07161 \pm 0.00038$
$A_{100}^{\text{PS}}$	252.1	$259 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4677	$0.4641 \pm 0.0090$	$H(0.57)$	93.214	$93.02^{+0.30}_{-0.24}$
$A_{143}^{\text{PS}}$	41.0	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6283	$0.622 \pm 0.012$	$D_A(0.57)$	1382.6	$1387.6^{+6.9}_{-8.3}$
$A_{143 \times 217}^{\text{PS}}$	39.1	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0239	$1.012 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.67491	$0.6759 \pm 0.0018$
$A_{217}^{\text{PS}}$	100.3	$98 \pm 11$	$\langle d^2 \rangle^{1/2}$	2.5101	$2.502 \pm 0.039$	$f\sigma_8(0.57)$	0.4885	$0.4839 \pm 0.0086$
$A^{\text{kSZ}}$	0.00	$< 3.97$	$z_{\text{re}}$	10.19	$10.3^{+1.6}_{-1.4}$	$\sigma_8(0.57)$	0.6285	$0.619^{+0.013}_{-0.011}$
$A_{100}^{\text{dust}TT}$	7.30	$7.4 \pm 1.9$	$10^9 A_s$	2.209	$2.216 \pm 0.073$	$f_{2000}^{143}$	28.62	$29.2 \pm 2.7$
$A_{143}^{\text{dust}TT}$	8.98	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8802	$1.880 \pm 0.011$	$f_{2000}^{143 \times 217}$	31.71	$31.9 \pm 1.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.77	$17.0 \pm 4.1$	$D_{40}$	1237.5	$1240 \pm 13$	$f_{2000}^{217}$	105.31	$105.6 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.3	$81.5 \pm 7.4$	$D_{220}$	5724.2	$5732 \pm 39$	$\chi_{\text{lowTEB}}^2$	10496.94	$10497.7 \pm 2.3$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0814 \pm 0.0057$	$D_{810}$	2534.5	$2535 \pm 13$	$\chi_{\text{plik}}^2$	2431.3	$2450.2 \pm 6.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0490 \pm 0.0050$	$D_{1420}$	814.89	$815.2 \pm 4.7$	$\chi_{\text{H070p6}}^2$	0.636	$0.83 \pm 0.30$
$A_{100 \times 217}^{\text{dust}EE}$	0.0991	$0.0995 \pm 0.032$	$D_{2000}$	230.73	$230.7 \pm 1.6$	$\chi_{\text{6DF}}^2$	0.0060	$0.062 \pm 0.079$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1003 \pm 0.0069$	$n_{\text{s},0.002}$	0.96619	$0.9662 \pm 0.0042$	$\chi_{\text{MGS}}^2$	1.473	$1.28 \pm 0.48$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.224 \pm 0.046$	$Y_{\text{P}}$	0.245360	$0.245362 \pm 0.000063$	$\chi_{\text{DR11CMass}}^2$	2.417	$2.85 \pm 0.64$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246686	$0.246689 \pm 0.000063$	$\chi_{\text{DR11LOWZ}}^2$	0.428	$0.79 \pm 0.58$
$A_{100}^{\text{dust}TE}$	0.1397	$0.141 \pm 0.038$	$10^5 D/H$	2.6055	$2.604 \pm 0.026$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.4$
$A_{100 \times 143}^{\text{dust}TE}$	0.1308	$0.132 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.7772	$13.800^{+0.024}_{-0.033}$	$\chi_{\text{CMB}}^2$	12928.2	$12947.9 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.302 \pm 0.085$	$z_*$	1089.965	$1089.93 \pm 0.23$	$\chi_{\text{BAO}}^2$	4.32	$4.99 \pm 0.94$
$A_{143}^{\text{dust}TE}$	0.156	$0.155 \pm 0.054$	$r_*$	144.632	$144.70 \pm 0.25$			

Best-fit  $\chi^2_{\text{eff}} = 12939.99$ ;  $\bar{\chi}^2_{\text{eff}} = 12973.05$ ;  $R - 1 = 0.01333$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.42 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.94 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.29 Hubble - H070p6: 0.64

## 7.26 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022293	$0.02231 \pm 0.00014$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.339 \pm 0.081$	$100\theta_*$	1.040999	$1.04104 \pm 0.00029$
$\Omega_c h^2$	0.11949	$0.1191 \pm 0.0011$	$A_{217}^{\text{dustTE}}$	1.670	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8933	$13.901 \pm 0.024$
$100\theta_{\text{MC}}$	1.040845	$1.04085 \pm 0.00030$	$c_{100}$	0.99821	$0.99815 \pm 0.00076$	$z_{\text{drag}}$	1059.704	$1059.73 \pm 0.30$
$\tau$	0.0801	$0.082 \pm 0.017$	$c_{217}$	0.99589	$0.9959 \pm 0.0014$	$r_{\text{drag}}$	147.321	$147.40 \pm 0.26$
$\Sigma m_\nu [\text{eV}]$	0.0008	$< 0.0724$	$H_0$	67.95	$67.66^{+0.57}_{-0.50}$	$k_D$	0.140563	$0.14049 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0942	$3.098 \pm 0.033$	$\Omega_\Lambda$	0.6929	$0.6897^{+0.0074}_{-0.0065}$	$100\theta_D$	0.160869	$0.16087 \pm 0.00018$
$n_s$	0.96604	$0.9664 \pm 0.0042$	$\Omega_m$	0.3071	$0.3103^{+0.0065}_{-0.0074}$	$z_{\text{eq}}$	3388.1	$3379 \pm 24$
$y_{\text{cal}}$	1.00016	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14179	$0.14204 \pm 0.00098$	$k_{\text{eq}}$	0.010341	$0.010314 \pm 0.000074$
$A_{217}^{\text{CIB}}$	65.0	$63.5 \pm 6.5$	$\Omega_\nu h^2$	0.000009	$< 0.000779$	$100\theta_{\text{eq}}$	0.81549	$0.8172 \pm 0.0046$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.29	—	$\Omega_m h^3$	0.096347	$0.09610^{+0.00044}_{-0.00034}$	$100\theta_{s,\text{eq}}$	0.45058	$0.4515 \pm 0.0024$
$A_{143}^{\text{tSZ}}$	7.06	$5.4 \pm 1.9$	$\sigma_8$	0.8438	$0.833^{+0.017}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.071803	$0.07165 \pm 0.00037$
$A_{100}^{\text{PS}}$	252.2	$259 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4676	$0.4639 \pm 0.0090$	$H(0.57)$	93.214	$93.04^{+0.29}_{-0.24}$
$A_{143}^{\text{PS}}$	42.3	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6282	$0.622 \pm 0.011$	$D_A(0.57)$	1382.6	$1386.8^{+6.8}_{-8.0}$
$A_{143 \times 217}^{\text{PS}}$	41.0	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0237	$1.012 \pm 0.018$	$F_{\text{AP}}(0.57)$	0.67491	$0.6757^{+0.0017}_{-0.0019}$
$A_{217}^{\text{PS}}$	100.8	$98 \pm 11$	$\langle d^2 \rangle^{1/2}$	2.5095	$2.501 \pm 0.039$	$f\sigma_8(0.57)$	0.4883	$0.4839 \pm 0.0085$
$A^{\text{kSZ}}$	0.01	$< 3.95$	$z_{\text{re}}$	10.14	$10.3^{+1.6}_{-1.4}$	$\sigma_8(0.57)$	0.6284	$0.620^{+0.013}_{-0.011}$
$A_{100}^{\text{dustTT}}$	7.43	$7.4 \pm 1.9$	$10^9 A_s$	2.207	$2.217 \pm 0.073$	$f_{2000}^{143}$	28.74	$29.1 \pm 2.7$
$A_{143}^{\text{dustTT}}$	8.98	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8804	$1.880 \pm 0.011$	$f_{2000}^{143 \times 217}$	31.85	$31.9 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.0 \pm 4.1$	$D_{40}$	1237.7	$1239 \pm 13$	$f_{2000}^{217}$	105.37	$105.6 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.0	$81.5 \pm 7.4$	$D_{220}$	5725.1	$5733 \pm 39$	$\chi_{\text{lowTEB}}^2$	10496.92	$10497.7 \pm 2.3$
$A_{100}^{\text{dustEE}}$	0.0812	$0.0815 \pm 0.0057$	$D_{810}$	2534.6	$2535 \pm 13$	$\chi_{\text{plik}}^2$	2431.3	$2450.2 \pm 6.8$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0491 \pm 0.0050$	$D_{1420}$	814.88	$815.2 \pm 4.7$	$\chi_{\text{H070p6}}^2$	0.636	$0.81 \pm 0.28$
$A_{100 \times 217}^{\text{dustEE}}$	0.0991	$0.0996 \pm 0.032$	$D_{2000}$	230.70	$230.7 \pm 1.6$	$\chi_{\text{JLA}}^2$	706.636	$706.75 \pm 0.20$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1003 \pm 0.0069$	$n_{s,0.002}$	0.96604	$0.9664 \pm 0.0042$	$\chi_{6\text{DF}}^2$	0.0061	$0.055 \pm 0.071$
$A_{143 \times 217}^{\text{dustEE}}$	0.2217	$0.224 \pm 0.046$	$Y_P$	0.245359	$0.245365 \pm 0.000063$	$\chi_{\text{MGS}}^2$	1.473	$1.33 \pm 0.47$
$A_{217}^{\text{dustEE}}$	0.649	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246685	$0.246691 \pm 0.000063$	$\chi_{\text{DR11CMass}}^2$	2.418	$2.81 \pm 0.58$
$A_{100}^{\text{dustTE}}$	0.1406	$0.141 \pm 0.038$	$10^5 D/H$	2.6059	$2.603 \pm 0.026$	$\chi_{\text{DR11LOWZ}}^2$	0.429	$0.73 \pm 0.54$
$A_{100 \times 143}^{\text{dustTE}}$	0.1315	$0.132 \pm 0.029$	$\text{Age/Gyr}$	13.7771	$13.798^{+0.024}_{-0.032}$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.4$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.302 \pm 0.085$	$z_*$	1089.969	$1089.92 \pm 0.23$	$\chi_{\text{CMB}}^2$	12928.2	$12947.9 \pm 6.6$
$A_{143}^{\text{dustTE}}$	0.155	$0.155 \pm 0.054$	$r_*$	144.630	$144.72 \pm 0.25$	$\chi_{\text{BAO}}^2$	4.326	$4.92 \pm 0.84$

Best-fit  $\chi_{\text{eff}}^2 = 13646.61$ ;  $\bar{\chi}_{\text{eff}}^2 = 13679.70$ ;  $R - 1 = 0.01404$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.42 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.92 plik\_dx11dr2\_HM\_v18\_TTTEEE:

**7.27 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO**

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022256	$0.02227 \pm 0.00020$	$\Omega_\nu h^2$	0.00069	$< 0.00156$	$k_D$	0.140245	$0.14017 \pm 0.00043$
$\Omega_c h^2$	0.11859	$0.1181 \pm 0.0014$	$\Omega_m h^3$	0.09599	$0.09567^{+0.00070}_{-0.00055}$	$100\theta_D$	0.160980	$0.16097 \pm 0.00026$
$100\theta_{MC}$	1.041011	$1.04105 \pm 0.00041$	$\sigma_8$	0.8162	$0.808^{+0.016}_{-0.013}$	$z_{eq}$	3365.8	$3356 \pm 32$
$\tau$	0.0654	$0.073^{+0.016}_{-0.019}$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.4503 \pm 0.0074$	$k_{eq}$	0.010273	$0.010242 \pm 0.000096$
$\Sigma m_\nu$ [eV]	0.064	$< 0.145$	$\sigma_8 \Omega_m^{0.25}$	0.6079	$0.603^{+0.010}_{-0.0089}$	$100\theta_{eq}$	0.8196	$0.8217 \pm 0.0060$
$\ln(10^{10} A_s)$	3.0617	$3.075^{+0.029}_{-0.035}$	$\sigma_8/h^{0.5}$	0.9911	$0.983^{+0.017}_{-0.014}$	$100\theta_{s,eq}$	0.45275	$0.4538 \pm 0.0031$
$n_s$	0.96799	$0.9687 \pm 0.0047$	$\langle d^2 \rangle^{1/2}$	2.4465	$2.450 \pm 0.026$	$r_{drag}/D_V(0.57)$	0.071819	$0.07167 \pm 0.00047$
$y_{cal}$	1.00014	$1.0003 \pm 0.0025$	$z_{re}$	8.78	$9.4 \pm 1.6$	$H(0.57)$	93.075	$92.89^{+0.41}_{-0.35}$
$A_{217}^{CIB}$	67.5	$64.3 \pm 6.6$	$10^9 A_s$	2.136	$2.166^{+0.061}_{-0.077}$	$D_A(0.57)$	1384.9	$1389.2^{+9.2}_{-11}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8742	$1.872 \pm 0.011$	$F_{AP}(0.57)$	0.67506	$0.6758^{+0.0021}_{-0.0023}$
$A_{143}^{tSZ}$	7.17	$5.1 \pm 1.9$	$D_{40}$	1225.3	$1227 \pm 12$	$f\sigma_8(0.57)$	0.4738	$0.4707^{+0.0071}_{-0.0063}$
$A_{100}^{PS}$	253.6	$259 \pm 28$	$D_{220}$	5714.7	$5719 \pm 40$	$\sigma_8(0.57)$	0.6082	$0.602^{+0.013}_{-0.010}$
$A_{143}^{PS}$	39.4	$44 \pm 8$	$D_{810}$	2532.7	$2532 \pm 13$	$f_{2000}^{143}$	30.02	$30.3 \pm 2.8$
$A_{143 \times 217}^{PS}$	32.8	$39^{+10}_{-10}$	$D_{1420}$	814.89	$814.9 \pm 4.9$	$f_{2000}^{143 \times 217}$	32.60	$32.6 \pm 2.0$
$A_{217}^{PS}$	97.1	$96 \pm 10$	$D_{2000}$	230.17	$230.2 \pm 1.7$	$f_{2000}^{217}$	106.15	$106.2 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.89$	$n_{s,0.002}$	0.96799	$0.9687 \pm 0.0047$	$\chi^2_{lensing}$	9.39	$9.7 \pm 1.4$
$A_{100}^{dustTT}$	7.47	$7.5 \pm 1.9$	$Y_P$	0.245343	$0.245348 \pm 0.000092$	$\chi^2_{lowTEB}$	10494.90	$10495.8 \pm 1.5$
$A_{143}^{dustTT}$	9.07	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246669	$0.246674 \pm 0.000093$	$\chi^2_{plik}$	766.2	$779.5 \pm 5.5$
$A_{143 \times 217}^{dustTT}$	17.70	$17.1 \pm 4.2$	$10^5 D/H$	2.6128	$2.610 \pm 0.039$	$\chi^2_{6DF}$	0.0061	$0.072 \pm 0.098$
$A_{217}^{dustTT}$	81.9	$81.7 \pm 7.4$	$Age/Gyr$	13.7973	$13.819^{+0.037}_{-0.047}$	$\chi^2_{MGS}$	1.47	$1.36 \pm 0.59$
$c_{100}$	0.99789	$0.99789 \pm 0.00078$	$z_*$	1089.936	$1089.88 \pm 0.32$	$\chi^2_{DR11CMass}$	2.395	$2.98 \pm 0.85$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$r_*$	144.887	$144.98 \pm 0.33$	$\chi^2_{DR11LOWZ}$	0.422	$0.78 \pm 0.70$
$H_0$	67.82	$67.54^{+0.74}_{-0.66}$	$100\theta_*$	1.041212	$1.04127 \pm 0.00041$	$\chi^2_{prior}$	2.13	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6923	$0.6894^{+0.0093}_{-0.0081}$	$D_A/Gpc$	13.9153	$13.924 \pm 0.032$	$\chi^2_{CMB}$	11270.5	$11285.0 \pm 5.5$
$\Omega_m$	0.3077	$0.3106^{+0.0081}_{-0.0093}$	$z_{drag}$	1059.551	$1059.58 \pm 0.45$	$\chi^2_{BAO}$	4.30	$5.2 \pm 1.3$
$\Omega_m h^2$	0.14154	$0.1417 \pm 0.0012$	$r_{drag}$	147.598	$147.69 \pm 0.35$			

Best-fit  $\chi^2_{eff} = 11276.91$ ;  $\Delta\chi^2_{eff} = 0.17$ ;  $\bar{\chi}^2_{eff} = 11297.54$ ;  $\Delta\bar{\chi}^2_{eff} = 0.84$ ;  $R - 1 = 0.00541$   
 $\chi^2_{eff}$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  -0.01) DR11LOWZ: 0.42 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.39 ( $\Delta$  0.15) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.90 ( $\Delta$  0.04) plik\_dx11dr2\_HM\_v18\_TT: 766.20 ( $\Delta$  0.00)



## 7.28 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022290	$0.02229 \pm 0.00020$	$\Omega_\nu h^2$	0.00055	$< 0.00144$	$k_D$	0.140298	$0.14017 \pm 0.00043$
$\Omega_c h^2$	0.11855	$0.1181 \pm 0.0014$	$\Omega_m h^3$	0.09613	$0.09573^{+0.00068}_{-0.00054}$	$100\theta_D$	0.160939	$0.16096 \pm 0.00025$
$100\theta_{MC}$	1.041039	$1.04107 \pm 0.00041$	$\sigma_8$	0.8183	$0.810^{+0.015}_{-0.012}$	$z_{eq}$	3365.7	$3354 \pm 31$
$\tau$	0.0646	$0.073^{+0.015}_{-0.018}$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.4501 \pm 0.0073$	$k_{eq}$	0.010272	$0.010236 \pm 0.000095$
$\Sigma m_\nu$ [eV]	0.051	$< 0.134$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.604^{+0.010}_{-0.0088}$	$100\theta_{eq}$	0.8197	$0.8220 \pm 0.0060$
$\ln(10^{10} A_s)$	3.0600	$3.075^{+0.028}_{-0.034}$	$\sigma_8/h^{0.5}$	0.9924	$0.984^{+0.016}_{-0.014}$	$100\theta_{s,eq}$	0.45280	$0.4540 \pm 0.0031$
$n_s$	0.96843	$0.9690 \pm 0.0047$	$\langle d^2 \rangle^{1/2}$	2.4450	$2.449 \pm 0.026$	$r_{drag}/D_V(0.57)$	0.071917	$0.07175 \pm 0.00046$
$y_{cal}$	1.00020	$1.0002 \pm 0.0024$	$z_{re}$	8.69	$9.4 \pm 1.5$	$H(0.57)$	93.175	$92.96^{+0.39}_{-0.34}$
$A_{217}^{CIB}$	67.7	$64.2 \pm 6.6$	$10^9 A_s$	2.133	$2.166^{+0.059}_{-0.076}$	$D_A(0.57)$	1382.5	$1387.5^{+8.8}_{-10}$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8742	$1.872 \pm 0.011$	$F_{AP}(0.57)$	0.67459	$0.6754 \pm 0.0021$
$A_{143}^{tSZ}$	7.20	$5.1 \pm 1.9$	$D_{40}$	1224.2	$1226 \pm 11$	$f\sigma_8(0.57)$	0.4742	$0.4710^{+0.0070}_{-0.0062}$
$A_{100}^{PS}$	253.6	$259 \pm 28$	$D_{220}$	5715.9	$5720 \pm 39$	$\sigma_8(0.57)$	0.6100	$0.603^{+0.012}_{-0.0098}$
$A_{143}^{PS}$	38.7	$44 \pm 8$	$D_{810}$	2533.1	$2532 \pm 13$	$f_{2000}^{143}$	29.82	$30.2 \pm 2.8$
$A_{143 \times 217}^{PS}$	32.1	$38^{+10}_{-10}$	$D_{1420}$	815.33	$815.0 \pm 4.9$	$f_{2000}^{143 \times 217}$	32.41	$32.6 \pm 2.0$
$A_{217}^{PS}$	96.2	$96 \pm 10$	$D_{2000}$	230.39	$230.2 \pm 1.7$	$f_{2000}^{217}$	105.94	$106.1 \pm 1.9$
$A^{kSZ}$	0.06	$< 4.87$	$n_{s,0.002}$	0.96843	$0.9690 \pm 0.0047$	$\chi^2_{lensing}$	9.42	$9.8 \pm 1.5$
$A_{100}^{dustTT}$	7.52	$7.5 \pm 1.9$	$Y_P$	0.245358	$0.245354 \pm 0.000092$	$\chi^2_{lowTEB}$	10494.80	$10495.7 \pm 1.4$
$A_{143}^{dustTT}$	9.15	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.246684	$0.246680 \pm 0.000092$	$\chi^2_{plik}$	766.2	$779.5 \pm 5.5$
$A_{143 \times 217}^{dustTT}$	17.69	$17.2 \pm 4.1$	$10^5 D/H$	2.6064	$2.607 \pm 0.038$	$\chi^2_{H070p6}$	0.620	$0.82 \pm 0.36$
$A_{217}^{dustTT}$	81.9	$81.7 \pm 7.4$	Age/Gyr	13.7863	$13.813^{+0.036}_{-0.045}$	$\chi^2_{6DF}$	0.00098	$0.059 \pm 0.083$
$c_{100}$	0.99790	$0.99789 \pm 0.00078$	$z_*$	1089.888	$1089.86 \pm 0.32$	$\chi^2_{MGS}$	1.61	$1.46 \pm 0.60$
$c_{217}$	0.99600	$0.9960 \pm 0.0014$	$r_*$	144.873	$145.00 \pm 0.33$	$\chi^2_{DR11CMass}$	2.433	$2.91 \pm 0.75$
$H_0$	67.99	$67.67^{+0.71}_{-0.64}$	$100\theta_*$	1.041234	$1.04129 \pm 0.00041$	$\chi^2_{DR11LOWZ}$	0.319	$0.66 \pm 0.62$
$\Omega_\Lambda$	0.6941	$0.6909^{+0.0088}_{-0.0079}$	$D_A/Gpc$	13.9136	$13.925 \pm 0.031$	$\chi^2_{prior}$	2.18	$7.3 \pm 3.6$
$\Omega_m$	0.3059	$0.3091^{+0.0079}_{-0.0088}$	$z_{drag}$	1059.628	$1059.60 \pm 0.44$	$\chi^2_{CMB}$	11270.5	$11285.0 \pm 5.5$
$\Omega_m h^2$	0.14139	$0.1415 \pm 0.0012$	$r_{drag}$	147.571	$147.70 \pm 0.34$	$\chi^2_{BAO}$	4.36	$5.1 \pm 1.1$

Best-fit  $\chi^2_{eff} = 11277.62$ ;  $\bar{\chi}^2_{eff} = 11298.19$ ;  $R - 1 = 0.00655$

$\chi^2_{eff}$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.43 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 9.42 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.80 plik\_dx11dr2\_HM\_v18\_TT: 766.24 Hubble - H070p6: 0.62

## 7.29 base\_mnu\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022266	$0.02229 \pm 0.00020$	$\Omega_m h^3$	0.09607	$0.09576^{+0.00066}_{-0.00054}$	$z_{\text{eq}}$	3364.3	$3352 \pm 31$
$\Omega_c h^2$	0.11852	$0.1180 \pm 0.0013$	$\sigma_8$	0.8181	$0.810^{+0.015}_{-0.012}$	$k_{\text{eq}}$	0.010268	$0.010232 \pm 0.000094$
$100\theta_{\text{MC}}$	1.041032	$1.04108 \pm 0.00041$	$\sigma_8 \Omega_m^{0.5}$	0.4525	$0.4499 \pm 0.0072$	$100\theta_{\text{eq}}$	0.8199	$0.8223 \pm 0.0059$
$\tau$	0.0649	$0.073^{+0.015}_{-0.018}$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.6038^{+0.0099}_{-0.0087}$	$100\theta_{\text{s,eq}}$	0.45290	$0.4542 \pm 0.0030$
$\Sigma m_\nu [\text{eV}]$	0.051	$< 0.130$	$\sigma_8/h^{0.5}$	0.9923	$0.985^{+0.016}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.071918	$0.07180 \pm 0.00044$
$\ln(10^{10} A_s)$	3.0599	$3.075^{+0.028}_{-0.034}$	$\langle d^2 \rangle^{1/2}$	2.4451	$2.448 \pm 0.026$	$H(0.57)$	93.156	$92.99^{+0.38}_{-0.33}$
$n_s$	0.96826	$0.9691 \pm 0.0047$	$z_{\text{re}}$	8.72	$9.4 \pm 1.5$	$D_A(0.57)$	1382.8	$1386.5^{+8.6}_{-9.8}$
$y_{\text{cal}}$	0.99996	$1.0002 \pm 0.0024$	$10^9 A_s$	2.133	$2.166^{+0.058}_{-0.075}$	$F_{\text{AP}}(0.57)$	0.67459	$0.6752 \pm 0.0020$
$A_{217}^{\text{CIB}}$	67.4	$64.2 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8732	$1.872 \pm 0.011$	$f\sigma_8(0.57)$	0.4741	$0.4711^{+0.0069}_{-0.0062}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.9	$1226 \pm 11$	$\sigma_8(0.57)$	0.6099	$0.604^{+0.012}_{-0.0097}$
$A_{143}^{\text{tSZ}}$	7.25	$5.1 \pm 1.9$	$D_{220}$	5712.2	$5720 \pm 39$	$f_{2000}^{143}$	29.92	$30.2 \pm 2.8$
$A_{100}^{\text{PS}}$	254.2	$259 \pm 28$	$D_{810}$	2531.5	$2532 \pm 13$	$f_{2000}^{143 \times 217}$	32.54	$32.5 \pm 2.0$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$D_{1420}$	814.62	$815.0 \pm 4.9$	$f_{2000}^{217}$	106.05	$106.1 \pm 1.9$
$A_{143 \times 217}^{\text{PS}}$	32.7	$38^{+10}_{-10}$	$D_{2000}$	230.13	$230.3 \pm 1.7$	$\chi_{\text{lensing}}^2$	9.39	$9.8 \pm 1.5$
$A_{217}^{\text{PS}}$	97.0	$96 \pm 10$	$n_{\text{s},0.002}$	0.96826	$0.9691 \pm 0.0047$	$\chi_{\text{lowTEB}}^2$	10494.83	$10495.7 \pm 1.4$
$A^{\text{kSZ}}$	0.00	$< 4.86$	$Y_{\text{P}}$	0.245347	$0.245357 \pm 0.000091$	$\chi_{\text{plik}}^2$	766.3	$779.5 \pm 5.5$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246673	$0.246684 \pm 0.000092$	$\chi_{\text{H070p6}}^2$	0.627	$0.78 \pm 0.34$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6109	$2.606 \pm 0.038$	$\chi_{\text{JLA}}^2$	706.610	$706.72 \pm 0.21$
$A_{143 \times 217}^{\text{dustTT}}$	17.75	$17.2 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.7891	$13.810^{+0.035}_{-0.044}$	$\chi_{6\text{DF}}^2$	0.00096	$0.052 \pm 0.074$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$z_*$	1089.916	$1089.84 \pm 0.31$	$\chi_{\text{MGS}}^2$	1.61	$1.52 \pm 0.59$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$r_*$	144.900	$145.01 \pm 0.32$	$\chi_{\text{DR11CMass}}^2$	2.433	$2.88 \pm 0.69$
$c_{217}$	0.99594	$0.9960 \pm 0.0014$	$100\theta_*$	1.041223	$1.04130 \pm 0.00040$	$\chi_{\text{DR11LOWZ}}^2$	0.318	$0.60 \pm 0.57$
$H_0$	67.97	$67.73 \pm 0.65$	$D_A/\text{Gpc}$	13.9163	$13.926 \pm 0.031$	$\chi_{\text{prior}}^2$	2.08	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6941	$0.6917^{+0.0085}_{-0.0077}$	$z_{\text{drag}}$	1059.589	$1059.61 \pm 0.44$	$\chi_{\text{CMB}}^2$	11270.5	$11285.0 \pm 5.5$
$\Omega_m$	0.3059	$0.3083 \pm 0.0080$	$r_{\text{drag}}$	147.605	$147.71 \pm 0.34$	$\chi_{\text{BAO}}^2$	4.36	$5.0 \pm 1.0$
$\Omega_m h^2$	0.14134	$0.1414 \pm 0.0011$	$k_{\text{D}}$	0.140242	$0.14016 \pm 0.00043$			
$\Omega_\nu h^2$	0.00055	$< 0.00140$	$100\theta_{\text{D}}$	0.160971	$0.16096 \pm 0.00025$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.21$ ;  $\Delta\chi_{\text{eff}}^2 = 0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.81$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.79$ ;  $R - 1 = 0.00684$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.39 ( $\Delta$  0.13) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.83 ( $\Delta$  -0.08) plik\_dx11dr2\_HM\_v18\_TT: 766.31 ( $\Delta$  0.18) Hubble - H070p6: 0.63 ( $\Delta$  -0.04) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

### 7.30 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022284	$0.02229 \pm 0.00014$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.337 \pm 0.080$	$100\theta_*$	1.041081	$1.04110 \pm 0.00030$
$\Omega_c h^2$	0.11900	$0.1188 \pm 0.0011$	$A_{217}^{\text{dustTE}}$	1.662	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.9048	$13.908 \pm 0.024$
$100\theta_{\text{MC}}$	1.040890	$1.04089 \pm 0.00030$	$c_{100}$	0.99817	$0.99814 \pm 0.00077$	$z_{\text{drag}}$	1059.666	$1059.67 \pm 0.30$
$\tau$	0.0625	$0.067^{+0.014}_{-0.016}$	$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.457	$147.49 \pm 0.26$
$\Sigma m_\nu [\text{eV}]$	0.047	$< 0.116$	$H_0$	67.81	$67.47^{+0.69}_{-0.59}$	$k_D$	0.140411	$0.14038 \pm 0.00029$
$\ln(10^{10} A_s)$	3.0570	$3.066^{+0.026}_{-0.029}$	$\Omega_\Lambda$	0.6916	$0.6877^{+0.0087}_{-0.0072}$	$100\theta_D$	0.160910	$0.16090 \pm 0.00017$
$n_s$	0.96644	$0.9665 \pm 0.0042$	$\Omega_m$	0.3084	$0.3123^{+0.0072}_{-0.0087}$	$z_{\text{eq}}$	3376.3	$3372 \pm 26$
$y_{\text{cal}}$	0.99987	$1.0003 \pm 0.0024$	$\Omega_m h^2$	0.14179	$0.1421 \pm 0.0010$	$k_{\text{eq}}$	0.010305	$0.010291 \pm 0.000078$
$A_{217}^{\text{CIB}}$	67.4	$64.5 \pm 6.5$	$\Omega_\nu h^2$	0.00050	$< 0.00125$	$100\theta_{\text{eq}}$	0.81765	$0.8186 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$\Omega_m h^3$	0.096144	$0.09586^{+0.00055}_{-0.00039}$	$100\theta_{s,\text{eq}}$	0.45172	$0.4522 \pm 0.0025$
$A_{143}^{\text{tSZ}}$	7.28	$5.3 \pm 1.9$	$\sigma_8$	0.8188	$0.811^{+0.014}_{-0.011}$	$r_{\text{drag}}/D_V(0.57)$	0.071762	$0.07156^{+0.00046}_{-0.00041}$
$A_{100}^{\text{PS}}$	256.2	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4547	$0.4532 \pm 0.0063$	$H(0.57)$	93.106	$92.91^{+0.37}_{-0.29}$
$A_{143}^{\text{PS}}$	39.7	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6102	$0.6062^{+0.0089}_{-0.0075}$	$D_A(0.57)$	1384.8	$1389.8^{+8.0}_{-9.9}$
$A_{143 \times 217}^{\text{PS}}$	34.9	$39^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9943	$0.987^{+0.015}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67523	$0.6762^{+0.0019}_{-0.0022}$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4511	$2.453 \pm 0.024$	$f\sigma_8(0.57)$	0.4751	$0.4724^{+0.0063}_{-0.0055}$
$A^{\text{kSZ}}$	0.01	$< 4.50$	$z_{\text{re}}$	8.50	$8.9 \pm 1.4$	$\sigma_8(0.57)$	0.6098	$0.603^{+0.012}_{-0.0087}$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$10^9 A_s$	2.126	$2.147^{+0.054}_{-0.065}$	$f_{2000}^{143}$	29.61	$29.9 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8765	$1.877 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.43	$32.5 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.2 \pm 4.2$	$D_{40}$	1228.6	$1231 \pm 11$	$f_{2000}^{217}$	105.90	$106.1 \pm 1.8$
$A_{217}^{\text{dustTT}}$	81.3	$81.7 \pm 7.4$	$D_{220}$	5721.8	$5728 \pm 38$	$\chi_{\text{lensing}}^2$	9.99	$10.2 \pm 1.7$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0815 \pm 0.0056$	$D_{810}$	2533.1	$2534 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.22	$10495.8 \pm 1.2$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0492 \pm 0.0050$	$D_{1420}$	814.72	$815.1 \pm 4.7$	$\chi_{\text{plik}}^2$	2435.2	$2453.7 \pm 6.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.1001	$0.0997 \pm 0.033$	$D_{2000}$	230.14	$230.2 \pm 1.5$	$\chi_{6\text{DF}}^2$	0.0104	$0.08 \pm 0.10$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1005 \pm 0.0069$	$n_{s,0.002}$	0.96644	$0.9665 \pm 0.0042$	$\chi_{\text{MGS}}^2$	1.41	$1.22 \pm 0.52$
$A_{143 \times 217}^{\text{dustEE}}$	0.2232	$0.224 \pm 0.047$	$Y_P$	0.245355	$0.245357 \pm 0.000065$	$\chi_{\text{DR11CMass}}^2$	2.406	$3.00 \pm 0.88$
$A_{217}^{\text{dustEE}}$	0.656	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246681	$0.246683 \pm 0.000065$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.90 \pm 0.71$
$A_{100}^{\text{dustTE}}$	0.1402	$0.141 \pm 0.038$	$10^5 D/H$	2.6076	$2.606 \pm 0.027$	$\chi_{\text{prior}}^2$	7.0	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dustTE}}$	0.1307	$0.131 \pm 0.029$	$\text{Age/Gyr}$	13.7913	$13.814^{+0.030}_{-0.041}$	$\chi_{\text{CMB}}^2$	12940.4	$12959.8 \pm 6.6$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.303 \pm 0.084$	$z_*$	1089.937	$1089.92 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.31	$5.2 \pm 1.3$
$A_{143}^{\text{dustTE}}$	0.155	$0.154 \pm 0.054$	$r_*$	144.760	$144.80 \pm 0.25$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.71$ ;  $\Delta\chi_{\text{eff}}^2 = 0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.47$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.83$ ;  $R - 1 = 0.01052$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.48 ( $\Delta$  -0.12) CMB - smica\_g30\_ftl\_full\_pp: 9.99 ( $\Delta$  0.32) lowl\_SMW\_70\_dx11d\_2014\_10\_03

10495.22 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.20 ( $\Delta$  -0.10)

### 7.31 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022290	$0.02230 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.079$	$100\theta_*$	1.041095	$1.04112 \pm 0.00030$
$\Omega_c h^2$	0.11897	$0.1187 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.665	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.9052	$13.909 \pm 0.024$
$100\theta_{\text{MC}}$	1.040919	$1.04091 \pm 0.00030$	$c_{100}$	0.99813	$0.99814 \pm 0.00078$	$z_{\text{drag}}$	1059.666	$1059.69 \pm 0.30$
$\tau$	0.0611	$0.067^{+0.014}_{-0.015}$	$c_{217}$	0.99605	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.462	$147.51 \pm 0.26$
$\Sigma m_\nu$ [eV]	0.022	$< 0.108$	$H_0$	68.04	$67.57^{+0.66}_{-0.57}$	$k_D$	0.140411	$0.14038 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0542	$3.066^{+0.025}_{-0.029}$	$\Omega_\Lambda$	0.6944	$0.6890^{+0.0083}_{-0.0071}$	$100\theta_D$	0.160905	$0.16090 \pm 0.00017$
$n_s$	0.96625	$0.9668 \pm 0.0041$	$\Omega_m$	0.3056	$0.3110^{+0.0071}_{-0.0083}$	$z_{\text{eq}}$	3375.6	$3370 \pm 25$
$y_{\text{cal}}$	1.00000	$1.0002 \pm 0.0024$	$\Omega_m h^2$	0.14149	$0.1419 \pm 0.0010$	$k_{\text{eq}}$	0.010302	$0.010286 \pm 0.000077$
$A_{217}^{\text{CIB}}$	67.8	$64.4 \pm 6.5$	$\Omega_\nu h^2$	0.00023	$< 0.00116$	$100\theta_{\text{eq}}$	0.81782	$0.8189 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.096268	$0.09591^{+0.00052}_{-0.00038}$	$100\theta_{s,\text{eq}}$	0.45180	$0.4524 \pm 0.0025$
$A_{143}^{\text{tSZ}}$	7.35	$5.3 \pm 1.9$	$\sigma_8$	0.8224	$0.812^{+0.014}_{-0.011}$	$r_{\text{drag}}/D_V(0.57)$	0.071909	$0.07163 \pm 0.00041$
$A_{100}^{\text{PS}}$	257.2	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4547	$0.4529 \pm 0.0063$	$H(0.57)$	93.228	$92.96^{+0.36}_{-0.28}$
$A_{143}^{\text{PS}}$	38.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6115	$0.6066^{+0.0087}_{-0.0074}$	$D_A(0.57)$	1381.6	$1388.3^{+7.7}_{-9.5}$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9970	$0.988^{+0.014}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67453	$0.6759^{+0.0018}_{-0.0021}$
$A_{217}^{\text{PS}}$	96.4	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4516	$2.453 \pm 0.024$	$f\sigma_8(0.57)$	0.4760	$0.4727^{+0.0062}_{-0.0054}$
$A^{\text{kSZ}}$	0.00	$< 4.47$	$z_{\text{re}}$	8.35	$8.9 \pm 1.4$	$\sigma_8(0.57)$	0.6130	$0.605^{+0.011}_{-0.0085}$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s$	2.120	$2.146^{+0.053}_{-0.063}$	$f_{2000}^{143}$	29.80	$29.9 \pm 2.6$
$A_{143}^{\text{dust}TT}$	9.08	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8765	$1.876 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.55	$32.5 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.69	$17.2 \pm 4.2$	$D_{40}$	1228.7	$1231 \pm 11$	$f_{2000}^{217}$	106.06	$106.1 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.9	$81.7 \pm 7.4$	$D_{220}$	5724.1	$5729 \pm 38$	$\chi^2_{\text{lensing}}$	10.07	$10.2 \pm 1.7$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0815 \pm 0.0056$	$D_{810}$	2533.1	$2534 \pm 13$	$\chi^2_{\text{lowTEB}}$	10495.25	$10495.8 \pm 1.2$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0493 \pm 0.0050$	$D_{1420}$	814.60	$815.1 \pm 4.7$	$\chi^2_{\text{plik}}$	2435.0	$2453.8 \pm 6.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0997	$0.100 \pm 0.033$	$D_{2000}$	230.11	$230.2 \pm 1.5$	$\chi^2_{\text{H070p6}}$	0.596	$0.86 \pm 0.34$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1005 \pm 0.0069$	$n_{s,0.002}$	0.96625	$0.9668 \pm 0.0041$	$\chi^2_{6\text{DF}}$	0.0010	$0.066 \pm 0.089$
$A_{143 \times 217}^{\text{dust}EE}$	0.2244	$0.224 \pm 0.047$	$Y_P$	0.245358	$0.245362^{+0.000069}_{-0.000063}$	$\chi^2_{\text{MGS}}$	1.61	$1.30 \pm 0.52$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246684	$0.246688^{+0.000069}_{-0.000063}$	$\chi^2_{\text{DR11CMass}}$	2.439	$2.90 \pm 0.74$
$A_{100}^{\text{dust}TE}$	0.1405	$0.141 \pm 0.038$	$10^5 D/H$	2.6064	$2.604 \pm 0.027$	$\chi^2_{\text{DR11LOWZ}}$	0.322	$0.79 \pm 0.64$
$A_{100 \times 143}^{\text{dust}TE}$	0.1323	$0.132 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.7787	$13.808^{+0.029}_{-0.039}$	$\chi^2_{\text{prior}}$	7.1	$19.5 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$z_*$	1089.925	$1089.89 \pm 0.24$	$\chi^2_{\text{CMB}}$	12940.3	$12959.8 \pm 6.6$
$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$r_*$	144.767	$144.81 \pm 0.25$	$\chi^2_{\text{BAO}}$	4.37	$5.1 \pm 1.1$

Best-fit  $\chi^2_{\text{eff}} = 12952.35$ ;  $\bar{\chi}^2_{\text{eff}} = 12985.21$ ;  $R - 1 = 0.01385$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMASS: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 10.07 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.25  
plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.95 Hubble - H070p6: 0.60

### 7.32 base\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022280	$0.02231 \pm 0.00014$	$A_{217}^{\text{dust}TE}$	1.665	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.666	$1059.69 \pm 0.30$
$\Omega_c h^2$	0.11908	$0.1187 \pm 0.0011$	$c_{100}$	0.99815	$0.99814 \pm 0.00078$	$r_{\text{drag}}$	147.442	$147.52 \pm 0.26$
$100\theta_{\text{MC}}$	1.040892	$1.04092 \pm 0.00030$	$c_{217}$	0.99611	$0.9960 \pm 0.0014$	$k_D$	0.140423	$0.14037 \pm 0.00030$
$\tau$	0.0603	$0.067 \pm 0.014$	$H_0$	67.97	$67.64^{+0.64}_{-0.55}$	$100\theta_D$	0.160911	$0.16089 \pm 0.00017$
$\Sigma m_\nu$ [eV]	0.023	$< 0.103$	$\Omega_\Lambda$	0.6935	$0.6898^{+0.0080}_{-0.0069}$	$z_{\text{eq}}$	3378.1	$3369 \pm 25$
$\ln(10^{10} A_s)$	3.0529	$3.066^{+0.025}_{-0.028}$	$\Omega_m$	0.3065	$0.3102^{+0.0069}_{-0.0080}$	$k_{\text{eq}}$	0.010310	$0.010282 \pm 0.000076$
$n_s$	0.96579	$0.9669 \pm 0.0041$	$\Omega_m h^2$	0.14160	$0.1418 \pm 0.0010$	$100\theta_{\text{eq}}$	0.81731	$0.8192 \pm 0.0048$
$y_{\text{cal}}$	1.00002	$1.0002 \pm 0.0024$	$\Omega_\nu h^2$	0.00024	$< 0.00111$	$100\theta_{s,\text{eq}}$	0.45154	$0.4525 \pm 0.0024$
$A_{217}^{\text{CIB}}$	68.3	$64.3 \pm 6.5$	$\Omega_m h^3$	0.096251	$0.09594^{+0.00050}_{-0.00038}$	$r_{\text{drag}}/D_V(0.57)$	0.071860	$0.07167 \pm 0.00040$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8220	$0.813^{+0.014}_{-0.010}$	$H(0.57)$	93.197	$92.99^{+0.35}_{-0.27}$
$A_{143}^{\text{tSZ}}$	7.35	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.4527 \pm 0.0062$	$D_A(0.57)$	1382.5	$1387.5^{+7.5}_{-9.2}$
$A_{100}^{\text{PS}}$	257.8	$261 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6116	$0.6067^{+0.0086}_{-0.0073}$	$F_{\text{AP}}(0.57)$	0.67474	$0.6757^{+0.0018}_{-0.0020}$
$A_{143}^{\text{PS}}$	38.8	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9970	$0.989^{+0.014}_{-0.012}$	$f\sigma_8(0.57)$	0.4760	$0.4728^{+0.0061}_{-0.0053}$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4521	$2.452 \pm 0.024$	$\sigma_8(0.57)$	0.6125	$0.605^{+0.011}_{-0.0082}$
$A_{217}^{\text{PS}}$	96.0	$97 \pm 10$	$z_{\text{re}}$	8.28	$8.9 \pm 1.4$	$f_{2000}^{143}$	29.98	$29.8 \pm 2.6$
$A^{\text{kSZ}}$	0.00	$< 4.46$	$10^9 A_s$	2.118	$2.147^{+0.053}_{-0.062}$	$f_{2000}^{143 \times 217}$	32.70	$32.5 \pm 1.8$
$A_{100}^{\text{dust}TT}$	7.51	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8771	$1.876 \pm 0.011$	$f_{2000}^{217}$	106.15	$106.0 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.12	$9.1 \pm 1.8$	$D_{40}$	1229.5	$1230 \pm 11$	$\chi_{\text{lensing}}^2$	10.12	$10.2 \pm 1.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.68	$17.1 \pm 4.2$	$D_{220}$	5724.6	$5729 \pm 38$	$\chi_{\text{lowTEB}}^2$	10495.33	$10495.8 \pm 1.1$
$A_{217}^{\text{dust}TT}$	81.7	$81.7 \pm 7.4$	$D_{810}$	2533.2	$2534 \pm 13$	$\chi_{\text{plik}}^2$	2434.7	$2453.8 \pm 6.8$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0815 \pm 0.0056$	$D_{1420}$	814.46	$815.1 \pm 4.7$	$\chi_{\text{H070p6}}^2$	0.627	$0.82 \pm 0.32$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0493 \pm 0.0050$	$D_{2000}$	230.03	$230.3 \pm 1.5$	$\chi_{\text{JLA}}^2$	706.622	$706.75 \pm 0.22$
$A_{100 \times 217}^{\text{dust}EE}$	0.1001	$0.100 \pm 0.033$	$n_{s,0.002}$	0.96579	$0.9669 \pm 0.0041$	$\chi_{6\text{DF}}^2$	0.0030	$0.057 \pm 0.079$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1006 \pm 0.0069$	$Y_{\text{P}}$	0.245353	$0.245364^{+0.000069}_{-0.000062}$	$\chi_{\text{MGS}}^2$	1.54	$1.36 \pm 0.51$
$A_{143 \times 217}^{\text{dust}EE}$	0.2236	$0.224 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.246691^{+0.000069}_{-0.000062}$	$\chi_{\text{DR11CMass}}^2$	2.419	$2.84 \pm 0.65$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$10^5 D/H$	2.6084	$2.603 \pm 0.027$	$\chi_{\text{DR11LOWZ}}^2$	0.372	$0.72 \pm 0.59$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141 \pm 0.038$	Age/Gyr	13.7815	$13.805^{+0.028}_{-0.038}$	$\chi_{\text{prior}}^2$	7.2	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.132 \pm 0.029$	$z_*$	1089.949	$1089.88 \pm 0.24$	$\chi_{\text{CMB}}^2$	12940.2	$12959.8 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	$r_*$	144.745	$144.83 \pm 0.25$	$\chi_{\text{BAO}}^2$	4.33	$4.98 \pm 0.96$
$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	$100\theta_*$	1.041065	$1.04112 \pm 0.00030$			
$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.337 \pm 0.079$	$D_A/\text{Gpc}$	13.9035	$13.911 \pm 0.024$			

Best-fit  $\chi_{\text{eff}}^2 = 13658.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 13691.86$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.76$ ;  $R - 1 = 0.01490$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMASS: 2.42 ( $\Delta$  0.01) DR11LOWZ: 0.37 ( $\Delta$  -0.11) CMB - smica\_g30\_ftl\_full\_pp: 10.12 ( $\Delta$  0.37) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.33 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.72 ( $\Delta$  -0.47) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 706.62 ( $\Delta$  -0.04)

### 7.33 base\_mnu\_lensonly

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02236	$0.02231 \pm 0.00088$	$z_{\text{re}}$	9.45	$10.52 \pm 0.90$	$z_{\text{drag}}$	1060.43	$1063.7 \pm 3.4$
$\Omega_c h^2$	0.1259	$0.169^{+0.037}_{-0.044}$	$10^9 A_s$	2.216	$1.89^{+0.29}_{-0.45}$	$r_{\text{drag}}$	145.4	$135.2^{+8.5}_{-10}$
$100\theta_{\text{MC}}$	1.055	$1.112^{+0.076}_{-0.065}$	$10^9 A_s e^{-2\tau}$	1.926	$1.64^{+0.26}_{-0.40}$	$k_D$	0.1428	$0.155 \pm 0.011$
$\Sigma m_\nu$ [eV]	0.56	$< 2.63$	$D_{40}$	1257	$1014^{+200}_{-300}$	$100\theta_D$	0.1626	$0.1701 \pm 0.0096$
$\ln(10^{10} A_s)$	3.098	$2.92 \pm 0.19$	$D_{220}$	5764	$4276^{+900}_{-2000}$	$z_{\text{eq}}$	3542	$4564^{+900}_{-1000}$
$n_s$	0.9606	$0.960 \pm 0.020$	$D_{810}$	2578	$1778^{+500}_{-700}$	$k_{\text{eq}}$	0.01082	$0.0140^{+0.0027}_{-0.0033}$
$H_0$	65.7	—	$D_{1420}$	827	$524^{+100}_{-300}$	$100\theta_{\text{eq}}$	0.801	$0.720^{+0.062}_{-0.095}$
$\Omega_\Lambda$	0.643	$0.46^{+0.38}_{-0.13}$	$D_{2000}$	235	$156^{+40}_{-80}$	$100\theta_{s,\text{eq}}$	0.4431	$0.402^{+0.033}_{-0.050}$
$\Omega_m$	0.357	$0.54^{+0.14}_{-0.38}$	$n_{s,0.002}$	0.9606	$0.960 \pm 0.020$	$r_{\text{drag}}/D_V(0.57)$	0.0703	$0.0715^{+0.0096}_{-0.015}$
$\Omega_m h^2$	0.154	$0.213^{+0.046}_{-0.065}$	$Y_P$	0.245388	$0.24536^{+0.00043}_{-0.00038}$	$H(0.57)$	93.5	$105 \pm 10$
$\Omega_\nu h^2$	0.0061	$< 0.0283$	$Y_P^{\text{BBN}}$	0.246715	$0.24668^{+0.00043}_{-0.00038}$	$D_A(0.57)$	1403	$1333^{+200}_{-300}$
$\Omega_m h^3$	0.101	$0.148^{+0.038}_{-0.068}$	$10^5 D/H$	2.593	$2.61^{+0.15}_{-0.19}$	$F_{\text{AP}}(0.57)$	0.687	$0.716^{+0.038}_{-0.071}$
$\sigma_8$	0.754	$0.69 \pm 0.11$	Age/Gyr	13.65	$12.4^{+1.3}_{-2.1}$	$f\sigma_8(0.57)$	0.4542	$0.420^{+0.056}_{-0.029}$
$\sigma_8 \Omega_m^{0.5}$	0.451	$0.470^{+0.058}_{-0.076}$	$z_*$	1090.56	$1094.8^{+3.7}_{-4.3}$	$\sigma_8(0.57)$	0.554	$0.50^{+0.11}_{-0.13}$
$\sigma_8 \Omega_m^{0.25}$	0.5829	$0.566 \pm 0.025$	$r_*$	142.8	$132.8^{+8.3}_{-10}$	$\chi^2_{\text{lensing}}$	8.25	$11.1 \pm 2.1$
$\sigma_8/h^{0.5}$	0.930	$0.841^{+0.072}_{-0.088}$	$100\theta_*$	1.055	$1.112^{+0.076}_{-0.065}$	$\chi^2_{\text{prior}}$	0.01	$2.0 \pm 1.9$
$\langle d^2 \rangle^{1/2}$	2.494	$2.455 \pm 0.064$	$D_A/\text{Gpc}$	13.53	$12.0^{+1.1}_{-1.7}$			

Best-fit  $\chi^2_{\text{eff}} = 8.25$ ;  $\Delta\chi^2_{\text{eff}} = -0.19$ ;  $\bar{\chi}^2_{\text{eff}} = 13.05$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.53$ ;  $R - 1 = 0.00493$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.24 ( $\Delta$  -0.20)

### 7.34 base\_mnu\_lensonly\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02228	$0.02235 \pm 0.00091$	$10^9 A_s e^{-2\tau}$	1.959	$1.66^{+0.21}_{-0.27}$	$z_{\text{eq}}$	3438	$4551^{+700}_{-900}$
$\Omega_c h^2$	0.1216	$0.168^{+0.030}_{-0.036}$	$D_{40}$	1296	$1028^{+200}_{-200}$	$k_{\text{eq}}$	0.01050	$0.0140^{+0.0022}_{-0.0028}$
$100\theta_{\text{MC}}$	1.0531	$1.121^{+0.050}_{-0.036}$	$D_{220}$	5952	$4333^{+900}_{-1000}$	$100\theta_{\text{eq}}$	0.817	$0.723^{+0.052}_{-0.068}$
$\Sigma m_\nu$ [eV]	0.41	$1.93^{+0.77}_{-1.6}$	$D_{810}$	2633	$1842^{+500}_{-700}$	$100\theta_{s,\text{eq}}$	0.4515	$0.403^{+0.027}_{-0.035}$
$\ln(10^{10} A_s)$	3.115	$2.94 \pm 0.14$	$D_{1420}$	842	$527^{+100}_{-300}$	$r_{\text{drag}}/D_V(0.57)$	0.07184	$0.07251 \pm 0.00063$
$n_s$	0.9604	$0.959 \pm 0.020$	$D_{2000}$	239	$153^{+40}_{-80}$	$H(0.57)$	94.1	$105.4^{+7.3}_{-8.6}$
$H_0$	67.74	$71.3^{+2.4}_{-3.0}$	$n_{s,0.002}$	0.9604	$0.959 \pm 0.020$	$D_A(0.57)$	1378	$1272 \pm 67$
$\Omega_\Lambda$	0.677	$0.589 \pm 0.057$	$Y_P$	0.245354	$0.24537 \pm 0.00041$	$F_{\text{AP}}(0.57)$	0.6790	$0.699^{+0.015}_{-0.012}$
$\Omega_m$	0.323	$0.411 \pm 0.057$	$Y_P^{\text{BBN}}$	0.246680	$0.24670 \pm 0.00041$	$f\sigma_8(0.57)$	0.4592	$0.438^{+0.026}_{-0.022}$
$\Omega_m h^2$	0.1483	$0.211^{+0.038}_{-0.053}$	$10^5 D/H$	2.608	$2.61^{+0.16}_{-0.19}$	$\sigma_8(0.57)$	0.5766	$0.517^{+0.040}_{-0.050}$
$\Omega_\nu h^2$	0.0044	$0.0208^{+0.0083}_{-0.017}$	Age/Gyr	13.62	$12.14^{+0.84}_{-1.1}$	$\chi^2_{\text{lensing}}$	8.27	$11.0 \pm 2.1$
$\Omega_m h^3$	0.1005	$0.152^{+0.029}_{-0.046}$	$z_*$	1090.24	$1094.6^{+3.1}_{-3.6}$	$\chi^2_{6\text{DF}}$	0.043	$0.64 \pm 0.56$
$\sigma_8$	0.776	$0.715^{+0.046}_{-0.053}$	$r_*$	144.0	$132.8 \pm 7.0$	$\chi^2_{\text{MGS}}$	1.156	$0.49 \pm 0.56$
$\sigma_8 \Omega_m^{0.5}$	0.4412	$0.456 \pm 0.021$	$100\theta_*$	1.0534	$1.121^{+0.050}_{-0.036}$	$\chi^2_{\text{DR11CMass}}$	2.00	$1.8 \pm 1.5$
$\sigma_8 \Omega_m^{0.25}$	0.5852	$0.571 \pm 0.025$	$D_A/\text{Gpc}$	13.67	$11.88^{+0.94}_{-1.3}$	$\chi^2_{\text{DR11LOWZ}}$	0.62	$1.4 \pm 1.1$
$\sigma_8/h^{0.5}$	0.943	$0.848^{+0.064}_{-0.077}$	$z_{\text{drag}}$	1059.89	$1063.7 \pm 3.2$	$\chi^2_{\text{prior}}$	0.00	$2.0 \pm 2.0$
$\langle d^2 \rangle^{1/2}$	2.486	$2.454 \pm 0.060$	$r_{\text{drag}}$	146.7	$135.2 \pm 7.2$	$\chi^2_{\text{BAO}}$	3.81	$4.3 \pm 1.5$
$z_{\text{re}}$	9.36	$10.51 \pm 0.77$	$k_D$	0.1413	$0.1552^{+0.0092}_{-0.011}$			
$10^9 A_s$	2.253	$1.91^{+0.24}_{-0.31}$	$100\theta_D$	0.1626	$0.1714^{+0.0063}_{-0.0050}$			

Best-fit  $\chi^2_{\text{eff}} = 12.08$ ;  $\Delta\chi^2_{\text{eff}} = -0.85$ ;  $\bar{\chi}^2_{\text{eff}} = 17.34$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -0.64$ ;  $R - 1 = 0.01298$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.04 ( $\Delta$  0.04) MGS: 1.16 ( $\Delta$  -0.32) DR11CMass: 2.00 ( $\Delta$  -0.46) DR11LOWZ: 0.61 ( $\Delta$  0.18) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.27 ( $\Delta$  -0.28)



### 7.35 base\_mnu\_lensonly\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02222	$0.02232 \pm 0.00091$	$10^9 A_s$	2.174	$1.88^{+0.23}_{-0.41}$	$r_{\text{drag}}$	146.0	$140.4^{+5.1}_{-6.8}$
$\Omega_c h^2$	0.1243	$0.146 \pm 0.021$	$10^9 A_s e^{-2\tau}$	1.890	$1.64^{+0.20}_{-0.35}$	$k_D$	0.1420	$0.1487 \pm 0.0067$
$\Sigma m_\nu$ [eV]	0.53	$1.22^{+0.51}_{-1.1}$	$D_{40}$	1220	$1017^{+100}_{-300}$	$100\theta_D$	0.16071	$0.1598^{+0.0015}_{-0.0017}$
$\ln(10^{10} A_s)$	3.079	$2.92^{+0.15}_{-0.20}$	$D_{220}$	5667	$4637^{+700}_{-1000}$	$z_{\text{eq}}$	3502	$4013 \pm 500$
$n_s$	0.9632	$0.960 \pm 0.020$	$D_{810}$	2540	$2169^{+300}_{-500}$	$k_{\text{eq}}$	0.01069	$0.0123 \pm 0.0016$
$H_0$	61.8	$< 57.1$	$D_{1420}$	820	$710^{+90}_{-200}$	$100\theta_{\text{eq}}$	0.796	$0.731^{+0.051}_{-0.088}$
$\Omega_\Lambda$	0.602	$0.27^{+0.47}_{-0.24}$	$D_{2000}$	231.6	$202^{+30}_{-40}$	$100\theta_{s,\text{eq}}$	0.4406	$0.406^{+0.027}_{-0.046}$
$\Omega_m$	0.398	$0.73^{+0.24}_{-0.47}$	$n_{s,0.002}$	0.9632	$0.960 \pm 0.020$	$r_{\text{drag}}/D_V(0.57)$	0.0676	$0.0618^{+0.0035}_{-0.0081}$
$\Omega_m h^2$	0.1522	$0.181^{+0.034}_{-0.029}$	$Y_P$	0.245326	$0.24536 \pm 0.00041$	$H(0.57)$	90.52	$89.89^{+0.88}_{-1.9}$
$\Omega_\nu h^2$	0.0057	$0.0131^{+0.0055}_{-0.012}$	$Y_P^{\text{BBN}}$	0.246652	$0.24669 \pm 0.00041$	$D_A(0.57)$	1470	$1595^{+170}_{-89}$
$\Omega_m h^3$	0.09412	$0.0935 \pm 0.0028$	$10^5 \text{D/H}$	2.620	$2.61^{+0.16}_{-0.19}$	$F_{\text{AP}}(0.57)$	0.697	$0.750 \pm 0.051$
$\sigma_8$	0.736	$0.639^{+0.079}_{-0.13}$	Age/Gyr	14.058	$14.23^{+0.30}_{-0.19}$	$f\sigma_8(0.57)$	0.450	$0.400^{+0.063}_{-0.040}$
$\sigma_8 \Omega_m^{0.5}$	0.465	$0.514^{+0.066}_{-0.048}$	$z_*$	1090.60	$1092.6 \pm 2.3$	$\sigma_8(0.57)$	0.533	$0.437^{+0.068}_{-0.13}$
$\sigma_8 \Omega_m^{0.25}$	0.5849	$0.569 \pm 0.024$	$r_*$	143.3	$137.9^{+4.8}_{-6.7}$	$\chi^2_{\text{lensing}}$	8.25	$10.7 \pm 2.1$
$\sigma_8/h^{0.5}$	0.936	$0.876 \pm 0.060$	$100\theta_*$	1.041191	$1.04125^{+0.00016}_{-0.00013}$	$\chi^2_{\text{prior}}$	0.00	$2.0 \pm 2.1$
$\langle d^2 \rangle^{1/2}$	2.490	$2.485 \pm 0.055$	$D_A/\text{Gpc}$	13.76	$13.24^{+0.46}_{-0.64}$			
$z_{\text{re}}$	9.43	$9.91 \pm 0.54$	$z_{\text{drag}}$	1059.97	$1061.9 \pm 2.7$			

Best-fit  $\chi^2_{\text{eff}} = 8.25$ ;  $\Delta\chi^2_{\text{eff}} = -0.19$ ;  $\bar{\chi}^2_{\text{eff}} = 12.70$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.28$ ;  $R - 1 = 0.00639$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.25 ( $\Delta$  -0.19)

### 7.36 base\_mnu\_lensonly\_BAO\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02227	$0.02226 \pm 0.00088$	$10^9 A_s e^{-2\tau}$	1.988	$2.02^{+0.13}_{-0.22}$	$100\theta_D$	0.16102	$0.1611 \pm 0.0013$
$\Omega_c h^2$	0.11516	$0.1146^{+0.0041}_{-0.0034}$	$D_{40}$	1328	$1345^{+97}_{-130}$	$z_{eq}$	3284	$3269^{+110}_{-86}$
$\Sigma m_\nu$ [eV]	0.243	$0.278^{+0.074}_{-0.28}$	$D_{220}$	6196	$6310^{+470}_{-770}$	$k_{eq}$	0.010025	$0.00998^{+0.00032}_{-0.00026}$
$\ln(10^{10} A_s)$	3.130	$3.141^{+0.074}_{-0.10}$	$D_{810}$	2693	$2738^{+190}_{-320}$	$100\theta_{eq}$	0.8349	$0.838^{+0.015}_{-0.021}$
$n_s$	0.9618	$0.963 \pm 0.020$	$D_{1420}$	862	$876^{+64}_{-110}$	$100\theta_{s,eq}$	0.4607	$0.4625^{+0.0080}_{-0.011}$
$H_0$	67.34	$67.25 \pm 0.96$	$D_{2000}$	242.5	$246^{+19}_{-31}$	$r_{drag}/D_V(0.57)$	0.07177	$0.07176 \pm 0.00055$
$\Omega_\Lambda$	0.6912	$0.691^{+0.011}_{-0.0093}$	$n_{s,0.002}$	0.9618	$0.963 \pm 0.020$	$H(0.57)$	92.50	$92.39^{+0.95}_{-0.82}$
$\Omega_m$	0.3088	$0.3093^{+0.0093}_{-0.011}$	$Y_P$	0.245349	$0.24533 \pm 0.00039$	$D_A(0.57)$	1394.2	$1396^{+15}_{-18}$
$\Omega_m h^2$	0.14005	$0.1398 \pm 0.0026$	$Y_P^{BBN}$	0.246675	$0.24666 \pm 0.00040$	$F_{AP}(0.57)$	0.67535	$0.6754 \pm 0.0025$
$\Omega_\nu h^2$	0.00262	$0.00299^{+0.00079}_{-0.0030}$	$10^5 D/H$	2.610	$2.62^{+0.16}_{-0.18}$	$f\sigma_8(0.57)$	0.4601	$0.457^{+0.014}_{-0.011}$
$\Omega_m h^3$	0.09431	$0.0940^{+0.0026}_{-0.0023}$	Age/Gyr	13.882	$13.90^{+0.11}_{-0.14}$	$\sigma_8(0.57)$	0.5872	$0.582^{+0.022}_{-0.017}$
$\sigma_8$	0.7868	$0.780^{+0.029}_{-0.022}$	$z_*$	1089.64	$1089.7 \pm 1.1$	$\chi^2_{lensing}$	8.35	$9.98 \pm 1.8$
$\sigma_8 \Omega_m^{0.5}$	0.4373	$0.434^{+0.016}_{-0.014}$	$r_*$	145.74	$145.9^{+1.2}_{-1.4}$	$\chi^2_{6DF}$	0.0106	$0.08 \pm 0.11$
$\sigma_8 \Omega_m^{0.25}$	0.5866	$0.582^{+0.021}_{-0.016}$	$100\theta_*$	1.041102	$1.04111^{+0.00012}_{-0.00015}$	$\chi^2_{MGS}$	1.41	$1.49 \pm 0.71$
$\sigma_8/h^{0.5}$	0.9588	$0.952^{+0.033}_{-0.025}$	$D_A/\text{Gpc}$	13.999	$14.01^{+0.11}_{-0.13}$	$\chi^2_{DR11CMAS}$	2.39	$3.1 \pm 1.1$
$\langle d^2 \rangle^{1/2}$	2.485	$2.492^{+0.050}_{-0.060}$	$z_{drag}$	1059.36	$1059.3 \pm 2.1$	$\chi^2_{DR11LOWZ}$	0.480	$0.72 \pm 0.74$
$z_{re}$	9.178	$9.18 \pm 0.23$	$r_{drag}$	148.47	$148.6^{+1.4}_{-1.7}$	$\chi^2_{prior}$	0.01	$2.0 \pm 2.0$
$10^9 A_s$	2.287	$2.32^{+0.15}_{-0.25}$	$k_D$	0.13937	$0.1392 \pm 0.0021$	$\chi^2_{BAO}$	4.28	$5.4 \pm 1.6$

Best-fit  $\chi^2_{eff} = 12.65$ ;  $\Delta\chi^2_{eff} = -0.29$ ;  $\bar{\chi}^2_{eff} = 17.34$ ;  $\Delta\bar{\chi}^2_{eff} = 0.39$ ;  $R - 1 = 0.00450$

$\chi^2_{eff}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  -0.07) DR11CMAS: 2.39 ( $\Delta$  -0.03) DR11LOWZ: 0.48 ( $\Delta$  0.03) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.35 ( $\Delta$  -0.27)

### 7.37 base\_mnu\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022243	$0.02211 \pm 0.00026$	$\Omega_m$	0.3091	$0.340^{+0.017}_{-0.042}$	$100\theta_*$	1.041044	$1.04093 \pm 0.00048$
$\Omega_c h^2$	0.11983	$0.1205 \pm 0.0023$	$\Omega_m h^2$	0.14209	$0.1451^{+0.0025}_{-0.0043}$	$D_A/\text{Gpc}$	13.8879	$13.877 \pm 0.048$
$100\theta_{\text{MC}}$	1.04087	$1.04064 \pm 0.00052$	$\Omega_\nu h^2$	0.00002	$< 0.00279$	$z_{\text{drag}}$	1059.628	$1059.40 \pm 0.50$
$\tau$	0.0728	$0.075^{+0.011}_{-0.013}$	$\Omega_m h^3$	0.09634	$0.0949^{+0.0018}_{-0.00066}$	$r_{\text{drag}}$	147.29	$147.19 \pm 0.52$
$\Sigma m_\nu [\text{eV}]$	0.002	$< 0.259$	$\sigma_8$	0.8389	$0.794^{+0.055}_{-0.019}$	$k_D$	0.14056	$0.14059 \pm 0.00055$
$\ln(10^{10} A_s)$	3.0797	$3.084 \pm 0.023$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.461 \pm 0.014$	$100\theta_D$	0.160935	$0.16103 \pm 0.00027$
$n_s$	0.9657	$0.9628 \pm 0.0066$	$\sigma_8 \Omega_m^{0.25}$	0.6255	$0.605^{+0.029}_{-0.015}$	$z_{\text{eq}}$	3395	$3408 \pm 51$
$y_{\text{cal}}$	1.00020	$1.0005 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0188	$0.980^{+0.051}_{-0.022}$	$k_{\text{eq}}$	0.010362	$0.01041 \pm 0.00016$
$A_{217}^{\text{CIB}}$	66.5	$64.5 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4957	$2.490 \pm 0.040$	$100\theta_{\text{eq}}$	0.8141	$0.8117 \pm 0.0095$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$z_{\text{re}}$	9.50	$9.7 \pm 1.1$	$100\theta_{\text{s,eq}}$	0.44991	$0.4487 \pm 0.0049$
$A_{143}^{\text{tSZ}}$	7.19	$4.9 \pm 2.0$	$10^9 A_s$	2.175	$2.186^{+0.047}_{-0.055}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.0702^{+0.0019}_{-0.00098}$
$A_{100}^{\text{PS}}$	251.9	$261 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8804	$1.883 \pm 0.014$	$H(0.57)$	93.15	$92.0^{+1.5}_{-0.65}$
$A_{143}^{\text{PS}}$	39.1	$45 \pm 8$	$D_{40}$	1234.1	$1237 \pm 15$	$D_A(0.57)$	1384.6	$1418^{+18}_{-44}$
$A_{143 \times 217}^{\text{PS}}$	33.8	$40^{+10}_{-10}$	$D_{220}$	5714.4	$5716 \pm 42$	$F_{\text{AP}}(0.57)$	0.6754	$0.6830^{+0.0043}_{-0.010}$
$A_{217}^{\text{PS}}$	98.1	$97 \pm 10$	$D_{810}$	2533.9	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4860	$0.469^{+0.023}_{-0.0098}$
$A^{\text{kSZ}}$	0.00	$< 4.99$	$D_{1420}$	814.6	$814.3 \pm 5.1$	$\sigma_8(0.57)$	0.6242	$0.585^{+0.047}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.43	$7.5 \pm 1.9$	$D_{2000}$	230.43	$229.7 \pm 2.0$	$f_{2000}^{143}$	29.43	$30.9 \pm 3.1$
$A_{143}^{\text{dustTT}}$	9.00	$9.0 \pm 1.9$	$n_{\text{s},0.002}$	0.9657	$0.9628 \pm 0.0066$	$f_{2000}^{143 \times 217}$	32.16	$33.2 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	17.57	$17.2 \pm 4.2$	$Y_{\text{P}}$	0.245337	$0.24527 \pm 0.00012$	$f_{2000}^{217}$	105.78	$106.8 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24660 \pm 0.00012$	$\chi_{\text{WMAPTEB}}^2$	19734.25	$19735.4 \pm 2.3$
$c_{100}$	0.99791	$0.99787 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.615	$2.641^{+0.047}_{-0.053}$	$\chi_{\text{plik}}^2$	763.4	$779.0 \pm 6.0$
$c_{217}$	0.99588	$0.9960 \pm 0.0014$	$\text{Age}/\text{Gyr}$	13.782	$13.913^{+0.061}_{-0.16}$	$\chi_{\text{prior}}^2$	2.06	$7.4 \pm 3.6$
$H_0$	67.80	$65.5^{+3.0}_{-1.3}$	$z_*$	1090.06	$1090.33^{+0.46}_{-0.56}$	$\chi_{\text{CMB}}^2$	20497.7	$20514.4 \pm 5.9$
$\Omega_\Lambda$	0.6909	$0.660^{+0.042}_{-0.017}$	$r_*$	144.58	$144.45 \pm 0.53$			

Best-fit  $\chi_{\text{eff}}^2 = 20499.74$ ;  $\Delta\chi_{\text{eff}}^2 = -0.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.79$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.66$ ;  $R - 1 = 0.00732$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353gfgf\_LFI312\_nw8: 19734.25 ( $\Delta$  0.10) plik\_dx11dr2\_HM.v18\_TT: 763.42 ( $\Delta$  -0.65)

### 7.38 base\_mnu\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02210 \pm 0.00027$	$\Omega_m$	$0.344^{+0.025}_{-0.047}$	$100\theta_*$	$1.04100 \pm 0.00048$
$\Omega_c h^2$	$0.1200 \pm 0.0023$	$\Omega_m h^2$	$0.1452^{+0.0031}_{-0.0048}$	$D_A/\text{Gpc}$	$13.888^{+0.053}_{-0.048}$
$100\theta_{\text{MC}}$	$1.04069 \pm 0.00054$	$\Omega_\nu h^2$	$< 0.00388$	$z_{\text{drag}}$	$1059.35 \pm 0.51$
$\tau$	$0.073 \pm 0.012$	$\Omega_m h^3$	$0.0945^{+0.0017}_{-0.00099}$	$r_{\text{drag}}$	$147.33 \pm 0.52$
$\Sigma m_\nu [\text{eV}]$	$< 0.360$	$\sigma_8$	$0.777^{+0.047}_{-0.026}$	$k_D$	$0.14045 \pm 0.00054$
$\ln(10^{10} A_s)$	$3.079 \pm 0.022$	$\sigma_8 \Omega_m^{0.5}$	$0.4538 \pm 0.0089$	$100\theta_D$	$0.16107 \pm 0.00028$
$n_s$	$0.9637 \pm 0.0069$	$\sigma_8 \Omega_m^{0.25}$	$0.593^{+0.018}_{-0.012}$	$z_{\text{eq}}$	$3396 \pm 52$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	$0.962^{+0.035}_{-0.021}$	$k_{\text{eq}}$	$0.01037 \pm 0.00016$
$A_{217}^{\text{CIB}}$	$64.8 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	$2.469^{+0.029}_{-0.035}$	$100\theta_{\text{eq}}$	$0.8140 \pm 0.0097$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$9.6 \pm 1.1$	$100\theta_{\text{s,eq}}$	$0.4500 \pm 0.0049$
$A_{143}^{\text{tSZ}}$	$4.9 \pm 2.0$	$10^9 A_s$	$2.175^{+0.046}_{-0.052}$	$r_{\text{drag}}/D_V(0.57)$	$0.0701^{+0.0021}_{-0.0014}$
$A_{100}^{\text{PS}}$	$263 \pm 28$	$10^9 A_s e^{-2\tau}$	$1.879 \pm 0.013$	$H(0.57)$	$91.8^{+1.5}_{-1.0}$
$A_{143}^{\text{PS}}$	$46 \pm 8$	$D_{40}$	$1232 \pm 13$	$D_A(0.57)$	$1423^{+28}_{-47}$
$A_{143 \times 217}^{\text{PS}}$	$39^{+9}_{-10}$	$D_{220}$	$5714 \pm 42$	$F_{\text{AP}}(0.57)$	$0.6838^{+0.0064}_{-0.011}$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{810}$	$2534 \pm 14$	$f\sigma_8(0.57)$	$0.461^{+0.016}_{-0.0090}$
$A^{\text{kSZ}}$	$< 5.28$	$D_{1420}$	$814.3 \pm 5.2$	$\sigma_8(0.57)$	$0.572^{+0.043}_{-0.023}$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$D_{2000}$	$229.4 \pm 2.0$	$f_{2000}^{143}$	$31.3 \pm 3.0$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.9$	$n_{\text{s},0.002}$	$0.9637 \pm 0.0069$	$f_{2000}^{143 \times 217}$	$33.5 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$Y_{\text{P}}$	$0.24527 \pm 0.00012$	$f_{2000}^{217}$	$107.0 \pm 2.1$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.5$	$Y_{\text{P}}^{\text{BBN}}$	$0.24660 \pm 0.00012$	$\chi_{\text{lensing}}^2$	$9.5 \pm 1.3$
$c_{100}$	$0.99788 \pm 0.00077$	$10^5 D/H$	$2.643 \pm 0.052$	$\chi_{\text{WMAPTEB}}^2$	$19734.7 \pm 1.9$
$c_{217}$	$0.9960 \pm 0.0014$	$\text{Age/Gyr}$	$13.940^{+0.099}_{-0.17}$	$\chi_{\text{plik}}^2$	$780.1 \pm 5.6$
$H_0$	$65.2^{+3.2}_{-2.0}$	$z_*$	$1090.31^{+0.52}_{-0.59}$	$\chi_{\text{prior}}^2$	$7.5 \pm 3.6$
$\Omega_\Lambda$	$0.656^{+0.047}_{-0.025}$	$r_*$	$144.58 \pm 0.54$	$\chi_{\text{CMB}}^2$	$20524.2 \pm 5.7$

$$\bar{\chi}_{\text{eff}}^2 = 20531.70; \Delta\bar{\chi}_{\text{eff}}^2 = 0.95; R - 1 = 0.01261$$

### 7.39 base\_mnu\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02226 \pm 0.00020$	$\Omega_\nu h^2$	$< 0.00102$	$k_D$	$0.14036^{+0.00050}_{-0.00045}$
$\Omega_c h^2$	$0.1189 \pm 0.0014$	$\Omega_m h^3$	$0.09594^{+0.00066}_{-0.00051}$	$100\theta_D$	$0.16095 \pm 0.00026$
$100\theta_{MC}$	$1.04095 \pm 0.00042$	$\sigma_8$	$0.823^{+0.021}_{-0.013}$	$z_{eq}$	$3374^{+35}_{-31}$
$\tau$	$0.076^{+0.011}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	$0.459^{+0.011}_{-0.0099}$	$k_{eq}$	$0.01030^{+0.00011}_{-0.000096}$
$\Sigma m_\nu$ [eV]	$< 0.0952$	$\sigma_8 \Omega_m^{0.25}$	$0.615^{+0.015}_{-0.011}$	$100\theta_{eq}$	$0.8181 \pm 0.0061$
$\ln(10^{10} A_s)$	$3.085^{+0.022}_{-0.025}$	$\sigma_8/h^{0.5}$	$1.001^{+0.023}_{-0.017}$	$100\theta_{s,eq}$	$0.4520^{+0.0030}_{-0.0034}$
$n_s$	$0.9671 \pm 0.0046$	$\langle d^2 \rangle^{1/2}$	$2.479 \pm 0.035$	$r_{drag}/D_V(0.57)$	$0.07161^{+0.00048}_{-0.00043}$
$y_{cal}$	$1.0005 \pm 0.0025$	$z_{re}$	$9.8 \pm 1.1$	$H(0.57)$	$92.96^{+0.37}_{-0.31}$
$A_{217}^{CIB}$	$63.8^{+6.4}_{-7.1}$	$10^9 A_s$	$2.187^{+0.048}_{-0.056}$	$D_A(0.57)$	$1388.6^{+8.2}_{-9.8}$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.012$	$F_{AP}(0.57)$	$0.6760^{+0.0019}_{-0.0022}$
$A_{143}^{tSZ}$	$5.1 \pm 1.9$	$D_{40}$	$1233 \pm 13$	$f\sigma_8(0.57)$	$0.479^{+0.010}_{-0.0078}$
$A_{100}^{PS}$	$258 \pm 27$	$D_{220}$	$5723 \pm 41$	$\sigma_8(0.57)$	$0.612^{+0.016}_{-0.0095}$
$A_{143}^{PS}$	$43 \pm 8$	$D_{810}$	$2535 \pm 14$	$f_{2000}^{143}$	$29.9 \pm 2.8$
$A_{143 \times 217}^{PS}$	$39 \pm 10$	$D_{1420}$	$815.1^{+5.4}_{-4.9}$	$f_{2000}^{143 \times 217}$	$32.3 \pm 2.0$
$A_{217}^{PS}$	$97 \pm 10$	$D_{2000}$	$230.4 \pm 1.8$	$f_{2000}^{217}$	$106.0 \pm 1.9$
$A^{kSZ}$	$< 4.65$	$n_{s,0.002}$	$0.9671 \pm 0.0046$	$\chi^2_{WMAPTEB}$	$19735.1 \pm 2.2$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P$	$0.245342 \pm 0.000090$	$\chi^2_{plik}$	$778 \pm 10$
$A_{143}^{dustTT}$	$9.0 \pm 1.8$	$Y_P^{BBN}$	$0.246669 \pm 0.000091$	$\chi^2_{6DF}$	$0.074 \pm 0.098$
$A_{143 \times 217}^{dustTT}$	$17.1 \pm 4.1$	$10^5 D/H$	$2.612 \pm 0.038$	$\chi^2_{MGS}$	$1.29 \pm 0.55$
$A_{217}^{dustTT}$	$81.8 \pm 7.4$	$Age/Gyr$	$13.808^{+0.033}_{-0.042}$	$\chi^2_{DR11CMass}$	$2.97 \pm 0.83$
$c_{100}$	$0.99791 \pm 0.00078$	$z_*$	$1089.97 \pm 0.30$	$\chi^2_{DR11LOWZ}$	$0.84 \pm 0.69$
$c_{217}$	$0.9959 \pm 0.0014$	$r_*$	$144.79^{+0.34}_{-0.38}$	$\chi^2_{prior}$	$7.3 \pm 3.5$
$H_0$	$67.55^{+0.69}_{-0.60}$	$100\theta_*$	$1.04115 \pm 0.00042$	$\chi^2_{CMB}$	$20510 \pm 10$
$\Omega_\Lambda$	$0.6886^{+0.0089}_{-0.0075}$	$D_A/Gpc$	$13.907^{+0.032}_{-0.036}$	$\chi^2_{BAO}$	$5.2 \pm 1.2$
$\Omega_m$	$0.3114^{+0.0075}_{-0.0089}$	$z_{drag}$	$1059.61 \pm 0.45$		
$\Omega_m h^2$	$0.1420 \pm 0.0012$	$r_{drag}$	$147.50^{+0.36}_{-0.41}$		

$$\bar{\chi}^2_{eff} = 20525.59; \Delta\bar{\chi}^2_{eff} = 0.69; R - 1 = 0.01723$$

## 8 mnu+Alens

### 8.1 base\_mnu\_Alens\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022407	$0.02238 \pm 0.00022$	$\Omega_m$	0.3115	$0.3115 \pm 0.0089$	$D_A/\text{Gpc}$	13.9469	$13.947 \pm 0.039$
$\Omega_c h^2$	0.11664	$0.1167 \pm 0.0019$	$\Omega_m h^2$	0.14133	$0.1413 \pm 0.0012$	$z_{\text{drag}}$	1059.780	$1059.73 \pm 0.47$
$100\theta_{\text{MC}}$	1.041240	$1.04124 \pm 0.00045$	$\Omega_\nu h^2$	0.00229	$0.0022^{+0.0011}_{-0.0016}$	$r_{\text{drag}}$	147.925	$147.94 \pm 0.42$
$\tau$	0.0602	$0.060 \pm 0.021$	$\Omega_m h^3$	0.09519	$0.09518^{+0.00094}_{-0.00074}$	$k_D$	0.140033	$0.14000 \pm 0.00046$
$\Sigma m_\nu [\text{eV}]$	0.213	$0.21^{+0.10}_{-0.15}$	$\sigma_8$	0.7696	$0.772^{+0.039}_{-0.033}$	$100\theta_D$	0.160858	$0.16089 \pm 0.00027$
$A_L$	1.091	$1.087^{+0.071}_{-0.084}$	$\sigma_8 \Omega_m^{0.5}$	0.4295	$0.430 \pm 0.018$	$z_{\text{eq}}$	3322.7	$3324 \pm 43$
$\ln(10^{10} A_s)$	3.0458	$3.046 \pm 0.042$	$\sigma_8 \Omega_m^{0.25}$	0.5750	$0.576^{+0.028}_{-0.025}$	$k_{\text{eq}}$	0.010142	$0.01014 \pm 0.00013$
$n_s$	0.9727	$0.9721 \pm 0.0057$	$\sigma_8/h^{0.5}$	0.9377	$0.940^{+0.045}_{-0.039}$	$100\theta_{\text{eq}}$	0.8283	$0.8282^{+0.0083}_{-0.0096}$
$y_{\text{cal}}$	0.99988	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4815	$2.480 \pm 0.038$	$100\theta_{s,\text{eq}}$	0.45720	$0.4572^{+0.0042}_{-0.0049}$
$A_{217}^{\text{CIB}}$	66.8	$64.0 \pm 6.6$	$z_{\text{re}}$	8.22	$8.1^{+2.4}_{-1.9}$	$r_{\text{drag}}/D_V(0.57)$	0.071623	$0.07164 \pm 0.00049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.103	$2.105 \pm 0.088$	$H(0.57)$	92.705	$92.71^{+0.48}_{-0.43}$
$A_{143}^{\text{tSZ}}$	7.26	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8643	$1.865 \pm 0.014$	$D_A(0.57)$	1392.5	$1392 \pm 11$
$A_{100}^{\text{PS}}$	252.4	$258 \pm 28$	$D_{40}$	1210.4	$1212 \pm 17$	$F_{\text{AP}}(0.57)$	0.67603	$0.6760 \pm 0.0023$
$A_{143}^{\text{PS}}$	36.9	$43 \pm 8$	$D_{220}$	5723.4	$5725 \pm 41$	$f\sigma_8(0.57)$	0.4502	$0.451^{+0.020}_{-0.018}$
$A_{143 \times 217}^{\text{PS}}$	31.4	$38^{+10}_{-10}$	$D_{810}$	2528.8	$2529 \pm 14$	$\sigma_8(0.57)$	0.5735	$0.575^{+0.029}_{-0.025}$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$D_{1420}$	815.1	$814.8 \pm 5.1$	$\chi^2_{\text{lensing}}$	9.53	$10.3 \pm 2.1$
$A^{\text{kSZ}}$	0.00	$< 4.75$	$D_{2000}$	230.74	$230.5 \pm 1.8$	$\chi^2_{\text{lowTEB}}$	10493.50	$10494.7 \pm 1.7$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9727	$0.9721 \pm 0.0057$	$\chi^2_{\text{plik}}$	766.7	$780.1 \pm 5.7$
$A_{143}^{\text{dustTT}}$	9.18	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245409	$0.24540 \pm 0.00010$	$\chi^2_{6\text{DF}}$	0.0300	$0.08 \pm 0.11$
$A_{143 \times 217}^{\text{dustTT}}$	17.37	$17.1 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246735	$0.24672 \pm 0.00010$	$\chi^2_{\text{MGS}}$	1.22	$1.31 \pm 0.62$
$A_{217}^{\text{dustTT}}$	81.5	$81.6 \pm 7.4$	$10^5 \text{D}/\text{H}$	2.5845	$2.590 \pm 0.042$	$\chi^2_{\text{DR11CMass}}$	2.46	$3.05 \pm 0.94$
$c_{100}$	0.99796	$0.99789 \pm 0.00077$	$\text{Age}/\text{Gyr}$	13.845	$13.845^{+0.049}_{-0.058}$	$\chi^2_{\text{DR11LOWZ}}$	0.68	$0.85 \pm 0.75$
$c_{217}$	0.99584	$0.9959 \pm 0.0014$	$z_*$	1089.595	$1089.64 \pm 0.38$	$\chi^2_{\text{prior}}$	2.01	$7.4 \pm 3.6$
$H_0$	67.35	$67.37 \pm 0.75$	$r_*$	145.257	$145.26 \pm 0.42$	$\chi^2_{\text{CMB}}$	11269.7	$11285.2 \pm 5.7$
$\Omega_\Lambda$	0.6885	$0.6885 \pm 0.0089$	$100\theta_*$	1.041504	$1.04150 \pm 0.00046$	$\chi^2_{\text{BAO}}$	4.38	$5.3 \pm 1.4$

Best-fit  $\chi^2_{\text{eff}} = 11276.09$ ;  $\Delta\chi^2_{\text{eff}} = -0.65$ ;  $\bar{\chi}^2_{\text{eff}} = 11297.84$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.15$ ;  $R - 1 = 0.00467$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.03 ( $\Delta$  0.02) MGS: 1.22 ( $\Delta$  -0.19) DR11CMass: 2.46 ( $\Delta$  0.06) DR11LOWZ: 0.68 ( $\Delta$  0.20) CMB - smica\_g30\_ftl\_full\_pp: 9.53 ( $\Delta$  0.29) low1\_SMW\_70\_dx11d\_2014\_10\_03: 10493.50 ( $\Delta$  -1.35) plik\_dx11dr2\_HM\_v18\_TT: 766.67 ( $\Delta$  0.47)

## 9 mnu+omegak

### 9.1 base\_mnu\_omegak\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022282	$0.02223 \pm 0.00024$	$\Omega_m$	0.3090	$0.3123^{+0.0086}_{-0.010}$	$D_A/\text{Gpc}$	13.9149	$13.911^{+0.049}_{-0.044}$
$\Omega_c h^2$	0.11851	$0.1188 \pm 0.0023$	$\Omega_m h^2$	0.14182	$0.1426^{+0.0024}_{-0.0030}$	$z_{\text{drag}}$	1059.628	$1059.52 \pm 0.48$
$100\theta_{\text{MC}}$	1.040997	$1.04095 \pm 0.00050$	$\Omega_\nu h^2$	0.00102	$< 0.00203$	$r_{\text{drag}}$	147.584	$147.56 \pm 0.49$
$\tau$	0.0690	$0.074^{+0.017}_{-0.020}$	$\Omega_m h^3$	0.09607	$0.0964^{+0.0019}_{-0.0021}$	$k_D$	0.14028	$0.14027 \pm 0.00051$
$\Omega_K$	0.00032	$0.0014^{+0.0029}_{-0.0039}$	$\sigma_8$	0.8117	$0.804^{+0.020}_{-0.014}$	$100\theta_D$	0.160944	$0.16100 \pm 0.00027$
$\Sigma m_\nu [\text{eV}]$	0.095	$< 0.189$	$\sigma_8 \Omega_m^{0.5}$	0.4512	$0.4493 \pm 0.0074$	$z_{\text{eq}}$	3365	$3370 \pm 51$
$\ln(10^{10} A_s)$	3.0684	$3.080^{+0.031}_{-0.038}$	$\sigma_8 \Omega_m^{0.25}$	0.6052	$0.601^{+0.012}_{-0.0094}$	$k_{\text{eq}}$	0.010269	$0.01028 \pm 0.00015$
$n_s$	0.9684	$0.9672 \pm 0.0064$	$\sigma_8/h^{0.5}$	0.9862	$0.978^{+0.021}_{-0.015}$	$100\theta_{\text{eq}}$	0.8199	$0.8190 \pm 0.0097$
$y_{\text{cal}}$	1.00017	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4456	$2.451 \pm 0.027$	$100\theta_{s,\text{eq}}$	0.45290	$0.4525 \pm 0.0050$
$A_{217}^{\text{CIB}}$	67.5	$64.6 \pm 6.5$	$z_{\text{re}}$	9.12	$9.6 \pm 1.7$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.07175 \pm 0.00052$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.151	$2.177^{+0.065}_{-0.086}$	$H(0.57)$	93.07	$93.13 \pm 0.73$
$A_{143}^{\text{tSZ}}$	7.27	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8735	$1.875^{+0.013}_{-0.015}$	$D_A(0.57)$	1385.7	$1387 \pm 12$
$A_{100}^{\text{PS}}$	253.8	$261 \pm 28$	$D_{40}$	1225.0	$1230 \pm 16$	$F_{\text{AP}}(0.57)$	0.67544	$0.6764^{+0.0023}_{-0.0029}$
$A_{143}^{\text{PS}}$	38.8	$44 \pm 8$	$D_{220}$	5714.1	$5718 \pm 42$	$f\sigma_8(0.57)$	0.4720	$0.4691^{+0.0082}_{-0.0066}$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39^{+10}_{-10}$	$D_{810}$	2533.0	$2533 \pm 14$	$\sigma_8(0.57)$	0.6047	$0.599^{+0.016}_{-0.011}$
$A_{217}^{\text{PS}}$	96.8	$97 \pm 10$	$D_{1420}$	815.08	$814.8 \pm 5.0$	$\chi^2_{\text{lensing}}$	9.13	$9.6 \pm 1.4$
$A^{\text{kSZ}}$	0.00	$< 5.01$	$D_{2000}$	230.35	$230.0 \pm 1.8$	$\chi^2_{\text{lowTEB}}$	10494.95	$10496.4 \pm 2.2$
$A_{100}^{\text{dustTT}}$	7.34	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9684	$0.9672 \pm 0.0064$	$\chi^2_{\text{plik}}$	766.2	$780.1 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.09	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245354	$0.24533 \pm 0.00011$	$\chi^2_{6\text{DF}}$	0.0104	$0.073 \pm 0.098$
$A_{143 \times 217}^{\text{dustTT}}$	17.84	$17.1 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246680	$0.24665 \pm 0.00011$	$\chi^2_{\text{MGS}}$	1.41	$1.38 \pm 0.62$
$A_{217}^{\text{dustTT}}$	82.2	$81.7 \pm 7.5$	$10^5 \text{D}/\text{H}$	2.6080	$2.619 \pm 0.047$	$\chi^2_{\text{DR11CMass}}$	2.37	$2.95 \pm 0.94$
$c_{100}$	0.99791	$0.99787 \pm 0.00078$	$\text{Age}/\text{Gyr}$	13.795	$13.78 \pm 0.10$	$\chi^2_{\text{DR11LOWZ}}$	0.473	$0.74 \pm 0.68$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$z_*$	1089.900	$1090.01 \pm 0.47$	$\chi^2_{\text{prior}}$	2.12	$7.4 \pm 3.6$
$H_0$	67.74	$67.60 \pm 0.74$	$r_*$	144.885	$144.85 \pm 0.50$	$\chi^2_{\text{CMB}}$	11270.3	$11286.1 \pm 5.7$
$\Omega_\Lambda$	0.6906	$0.686^{+0.013}_{-0.0096}$	$100\theta_*$	1.041215	$1.04119 \pm 0.00047$	$\chi^2_{\text{BAO}}$	4.26	$5.1 \pm 1.4$

Best-fit  $\chi^2_{\text{eff}} = 11276.69$ ;  $\Delta\chi^2_{\text{eff}} = -0.05$ ;  $\bar{\chi}^2_{\text{eff}} = 11298.64$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.95$ ;  $R - 1 = 0.03072$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.37 ( $\Delta$  -0.03) DR11LOWZ: 0.47 ( $\Delta$  -0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.13 ( $\Delta$  -0.11) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.95 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18.TT: 766.23 ( $\Delta$  0.03)

# 10 mnu+w

## 10.1 base\_mnu\_w\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022346	$0.02225 \pm 0.00022$	$\Omega_m$	0.3148	$0.307^{+0.015}_{-0.013}$	$D_A/\text{Gpc}$	13.9313	$13.918 \pm 0.038$
$\Omega_c h^2$	0.11763	$0.1184 \pm 0.0018$	$\Omega_m h^2$	0.14001	$0.1423^{+0.0021}_{-0.0023}$	$z_{\text{drag}}$	1059.704	$1059.55 \pm 0.45$
$100\theta_{\text{MC}}$	1.041176	$1.04099 \pm 0.00045$	$\Omega_\nu h^2$	0.00003	$< 0.00213$	$r_{\text{drag}}$	147.754	$147.63 \pm 0.41$
$\tau$	0.0710	$0.074 \pm 0.018$	$\Omega_m h^3$	0.09338	$0.0971^{+0.0030}_{-0.0043}$	$k_D$	0.140147	$0.14021 \pm 0.00046$
$\Sigma m_\nu [\text{eV}]$	0.003	$< 0.198$	$\sigma_8$	0.8089	$0.810 \pm 0.018$	$100\theta_D$	0.160907	$0.16099 \pm 0.00026$
$w$	-0.934	$-1.04^{+0.12}_{-0.073}$	$\sigma_8 \Omega_m^{0.5}$	0.4538	$0.4484^{+0.0089}_{-0.0077}$	$z_{\text{eq}}$	3345.1	$3361 \pm 40$
$\ln(10^{10} A_s)$	3.0709	$3.077 \pm 0.033$	$\sigma_8 \Omega_m^{0.25}$	0.6059	$0.603 \pm 0.010$	$k_{\text{eq}}$	0.010209	$0.01026 \pm 0.00012$
$n_s$	0.9706	$0.9681 \pm 0.0056$	$\sigma_8/h^{0.5}$	0.9905	$0.981^{+0.017}_{-0.015}$	$100\theta_{\text{eq}}$	0.8237	$0.8206 \pm 0.0077$
$y_{\text{cal}}$	1.00029	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4393	$2.457 \pm 0.031$	$100\theta_{\text{s,eq}}$	0.45484	$0.4533 \pm 0.0039$
$A_{217}^{\text{CIB}}$	66.6	$64.4 \pm 6.6$	$z_{\text{re}}$	9.27	$9.5 \pm 1.7$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07157 \pm 0.00050$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$10^9 A_s$	2.156	$2.171^{+0.068}_{-0.079}$	$H(0.57)$	93.56	$92.5^{+1.1}_{-0.58}$
$A_{143}^{\text{tSZ}}$	7.24	$5.1 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8709	$1.873 \pm 0.012$	$D_A(0.57)$	1389.4	$1389 \pm 12$
$A_{100}^{\text{PS}}$	251.6	$260 \pm 28$	$D_{40}$	1223.0	$1227 \pm 12$	$F_{\text{AP}}(0.57)$	0.6807	$0.6726^{+0.0097}_{-0.0072}$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$D_{220}$	5721.3	$5718 \pm 40$	$f\sigma_8(0.57)$	0.4631	$0.476^{+0.014}_{-0.018}$
$A_{143 \times 217}^{\text{PS}}$	33.6	$39^{+10}_{-10}$	$D_{810}$	2532.7	$2532 \pm 13$	$\sigma_8(0.57)$	0.6030	$0.603 \pm 0.014$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$D_{1420}$	815.8	$814.7 \pm 5.0$	$\chi^2_{\text{lensing}}$	9.37	$9.6 \pm 1.4$
$A^{\text{kSZ}}$	0.02	$< 4.93$	$D_{2000}$	230.69	$230.1 \pm 1.8$	$\chi^2_{\text{lowTEB}}$	10494.95	$10495.9 \pm 1.6$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9706	$0.9681 \pm 0.0056$	$\chi^2_{\text{plik}}$	766.5	$779.6 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.08	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245382	$0.245337 \pm 0.000099$	$\chi^2_{6\text{DF}}$	0.0999	$0.18 \pm 0.27$
$A_{143 \times 217}^{\text{dustTT}}$	17.72	$17.2 \pm 4.1$	$Y_{\text{P}}^{\text{BBN}}$	0.246709	$0.24666 \pm 0.00010$	$\chi^2_{\text{MGS}}$	0.93	$1.7 \pm 1.1$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.4$	$10^5 D/H$	2.5958	$2.615 \pm 0.041$	$\chi^2_{\text{DR11CMass}}$	1.83	$3.6 \pm 1.5$
$c_{100}$	0.99787	$0.99787 \pm 0.00078$	Age/Gyr	13.7993	$13.827 \pm 0.045$	$\chi^2_{\text{DR11LOWZ}}$	0.699	$0.77 \pm 0.78$
$c_{217}$	0.99589	$0.9960 \pm 0.0015$	$z_*$	1089.738	$1089.95 \pm 0.38$	$\chi^2_{\text{prior}}$	2.18	$7.4 \pm 3.6$
$H_0$	66.69	$68.2^{+1.5}_{-2.1}$	$r_*$	145.071	$144.92 \pm 0.41$	$\chi^2_{\text{CMB}}$	11270.9	$11285.0 \pm 5.5$
$\Omega_\Lambda$	0.6852	$0.693^{+0.013}_{-0.015}$	$100\theta_*$	1.041329	$1.04124 \pm 0.00043$	$\chi^2_{\text{BAO}}$	3.55	$6.3 \pm 2.3$

Best-fit  $\chi^2_{\text{eff}} = 11276.58$ ;  $\Delta\chi^2_{\text{eff}} = -0.16$ ;  $\bar{\chi}^2_{\text{eff}} = 11298.68$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.99$ ;  $R - 1 = 0.00919$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.10 ( $\Delta$  0.09) MGS: 0.93 ( $\Delta$  -0.48) DR11CMass: 1.83 ( $\Delta$  -0.58) DR11LOWZ: 0.70 ( $\Delta$  0.22) CMB - smica\_g30\_ftl\_full\_pp: 9.37 ( $\Delta$  0.13) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.95 ( $\Delta$  0.10) plik\_dx11dr2\_HM.v18.TT: 766.52 ( $\Delta$  0.32)



# 11 nnu

## 11.1 base\_nnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022238	$0.02230 \pm 0.00037$	$\Omega_m$	0.3142	$0.312 \pm 0.021$	$D_A/\text{Gpc}$	13.894	$13.83 \pm 0.25$
$\Omega_c h^2$	0.11961	$0.1205 \pm 0.0041$	$\Omega_m h^2$	0.14249	$0.1435 \pm 0.0042$	$z_{\text{drag}}$	1059.59	$1059.9 \pm 1.3$
$100\theta_{\text{MC}}$	1.04088	$1.04082 \pm 0.00057$	$\Omega_m h^3$	0.0960	$0.0976^{+0.0059}_{-0.0069}$	$r_{\text{drag}}$	147.36	$146.7 \pm 2.8$
$\tau$	0.0775	$0.080 \pm 0.022$	$\sigma_8$	0.8290	$0.834^{+0.022}_{-0.025}$	$k_D$	0.14050	$0.1410 \pm 0.0020$
$N_{\text{eff}}$	3.044	$3.13^{+0.30}_{-0.34}$	$\sigma_8 \Omega_m^{0.5}$	0.4647	$0.465 \pm 0.013$	$100\theta_D$	0.16094	$0.16111 \pm 0.00069$
$\ln(10^{10} A_s)$	3.0887	$3.096 \pm 0.047$	$\sigma_8 \Omega_m^{0.25}$	0.6207	$0.622 \pm 0.014$	$z_{\text{eq}}$	3391	$3380 \pm 74$
$n_s$	0.9662	$0.969 \pm 0.016$	$\sigma_8/h^{0.5}$	1.0102	$1.011 \pm 0.019$	$k_{\text{eq}}$	0.010347	$0.01036 \pm 0.00016$
$y_{\text{cal}}$	1.00028	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4950	$2.495 \pm 0.048$	$100\theta_{\text{eq}}$	0.8150	$0.817^{+0.014}_{-0.015}$
$A_{217}^{\text{CIB}}$	66.5	$64.1 \pm 6.8$	$z_{\text{re}}$	9.94	$10.1 \pm 2.0$	$100\theta_{\text{s,eq}}$	0.4503	$0.4516^{+0.0069}_{-0.0078}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$10^9 A_s$	2.195	$2.214^{+0.097}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	0.07143	$0.0716^{+0.0010}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	7.09	$5.1 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8796	$1.883 \pm 0.022$	$H(0.57)$	92.88	$93.5^{+2.4}_{-2.7}$
$A_{100}^{\text{PS}}$	252.1	$259 \pm 29$	$D_{40}$	1234.5	$1234 \pm 22$	$D_A(0.57)$	1391.3	$1382 \pm 47$
$A_{143}^{\text{PS}}$	39.8	$44 \pm 8$	$D_{220}$	5714.9	$5717 \pm 42$	$F_{\text{AP}}(0.57)$	0.6767	$0.6759 \pm 0.0053$
$A_{143 \times 217}^{\text{PS}}$	34.7	$39^{+10}_{-10}$	$D_{810}$	2534.4	$2535 \pm 14$	$f\sigma_8(0.57)$	0.4827	$0.484 \pm 0.011$
$A_{217}^{\text{PS}}$	98.2	$97 \pm 10$	$D_{1420}$	815.0	$814.2 \pm 5.2$	$\sigma_8(0.57)$	0.6161	$0.620^{+0.019}_{-0.022}$
$A^{\text{kSZ}}$	0.00	$< 4.76$	$D_{2000}$	230.51	$230.0 \pm 2.3$	$f_{2000}^{143}$	29.41	$30 \pm 3$
$A_{100}^{\text{dustTT}}$	7.46	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9662	$0.969 \pm 0.016$	$f_{2000}^{143 \times 217}$	32.15	$32.7 \pm 2.6$
$A_{143}^{\text{dustTT}}$	8.99	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.24530	$0.2463 \pm 0.0044$	$f_{2000}^{217}$	105.73	$106.3 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.55	$17.1 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24663	$0.2477 \pm 0.0044$	$\chi_{\text{lowTEB}}^2$	10496.30	$10497.5 \pm 2.8$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$10^5 D/H$	2.615	$2.631 \pm 0.070$	$\chi_{\text{plik}}^2$	763.6	$778.2 \pm 6.0$
$c_{100}$	0.99791	$0.99789 \pm 0.00078$	Age/Gyr	13.813	$13.74 \pm 0.33$	$\chi_{\text{prior}}^2$	2.00	$7.4 \pm 3.6$
$c_{217}$	0.99592	$0.9960 \pm 0.0015$	$z_*$	1090.050	$1090.13 \pm 0.50$	$\chi_{\text{CMB}}^2$	11259.9	$11275.7 \pm 5.7$
$H_0$	67.34	$68.0^{+2.6}_{-3.0}$	$r_*$	144.65	$144.0 \pm 2.7$			
$\Omega_\Lambda$	0.6858	$0.688 \pm 0.021$	$100\theta_*$	1.04108	$1.04096 \pm 0.00071$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.94$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.20$ ;  $R - 1 = 0.00593$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 ( $\Delta$  -0.17) plik\_dx11dr2\_HM\_v18\_TT: 763.64 ( $\Delta$  0.26)

## 11.2 base\_nnu\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022324	$0.02237 \pm 0.00034$	$\Omega_m$	0.3091	$0.306 \pm 0.018$	$D_A/\text{Gpc}$	13.856	$13.80 \pm 0.24$
$\Omega_c h^2$	0.11984	$0.1208 \pm 0.0041$	$\Omega_m h^2$	0.14281	$0.1439 \pm 0.0043$	$z_{\text{drag}}$	1059.86	$1060.1 \pm 1.2$
$100\theta_{\text{MC}}$	1.04087	$1.04080 \pm 0.00057$	$\Omega_m h^3$	0.0971	$0.0988^{+0.0055}_{-0.0065}$	$r_{\text{drag}}$	146.92	$146.3 \pm 2.7$
$\tau$	0.0827	$0.084 \pm 0.021$	$\sigma_8$	0.8335	$0.837^{+0.021}_{-0.024}$	$k_D$	0.14081	$0.1413 \pm 0.0020$
$N_{\text{eff}}$	3.099	$3.18^{+0.28}_{-0.32}$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.463 \pm 0.013$	$100\theta_D$	0.16102	$0.16121 \pm 0.00068$
$\ln(10^{10} A_s)$	3.1000	$3.104 \pm 0.046$	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.622 \pm 0.014$	$z_{\text{eq}}$	3373	$3363 \pm 64$
$n_s$	0.9695	$0.972 \pm 0.014$	$\sigma_8/h^{0.5}$	1.0110	$1.010 \pm 0.019$	$k_{\text{eq}}$	0.010332	$0.01035 \pm 0.00016$
$y_{\text{cal}}$	1.00042	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4943	$2.489 \pm 0.047$	$100\theta_{\text{eq}}$	0.8184	$0.821^{+0.012}_{-0.014}$
$A_{217}^{\text{CIB}}$	67.1	$64.3 \pm 6.8$	$z_{\text{re}}$	10.40	$10.4 \pm 1.9$	$100\theta_{\text{s,eq}}$	0.4521	$0.4532^{+0.0060}_{-0.0069}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s$	2.220	$2.230^{+0.095}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07170	$0.07188^{+0.00092}_{-0.0011}$
$A_{143}^{\text{tSZ}}$	7.23	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8814	$1.885 \pm 0.022$	$H(0.57)$	93.39	$94.0^{+2.2}_{-2.5}$
$A_{100}^{\text{PS}}$	253.0	$260 \pm 29$	$D_{40}$	1231.7	$1229 \pm 21$	$D_A(0.57)$	1381.0	$1371 \pm 42$
$A_{143}^{\text{PS}}$	38.6	$45 \pm 8$	$D_{220}$	5719.4	$5719 \pm 41$	$F_{\text{AP}}(0.57)$	0.67541	$0.6747 \pm 0.0046$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39^{+10}_{-10}$	$D_{810}$	2534.9	$2535 \pm 14$	$f\sigma_8(0.57)$	0.4840	$0.485 \pm 0.011$
$A_{217}^{\text{PS}}$	97.2	$97 \pm 10$	$D_{1420}$	815.0	$814.2 \pm 5.2$	$\sigma_8(0.57)$	0.6207	$0.624^{+0.018}_{-0.021}$
$A^{\text{kSZ}}$	0.01	$< 4.88$	$D_{2000}$	230.44	$229.9 \pm 2.3$	$f_{2000}^{143}$	29.62	$31 \pm 3$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9695	$0.972 \pm 0.014$	$f_{2000}^{143 \times 217}$	32.28	$32.9 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.06	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.24610	$0.2471 \pm 0.0041$	$f_{2000}^{217}$	105.94	$106.4 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.76	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24743	$0.2485 \pm 0.0042$	$\chi_{\text{lowTEB}}^2$	10496.30	$10497.1 \pm 2.8$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.5$	$10^5 D/H$	2.619	$2.637 \pm 0.071$	$\chi_{\text{plik}}^2$	763.6	$778.5 \pm 7.8$
$c_{100}$	0.99791	$0.99789 \pm 0.00078$	Age/Gyr	13.747	$13.67 \pm 0.31$	$\chi_{\text{JLA}}^2$	706.683	$706.89 \pm 0.53$
$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$z_*$	1090.017	$1090.12 \pm 0.50$	$\chi_{\text{prior}}^2$	2.12	$7.4 \pm 3.6$
$H_0$	67.98	$68.6^{+2.3}_{-2.8}$	$r_*$	144.24	$143.6 \pm 2.6$	$\chi_{\text{CMB}}^2$	11259.9	$11275.6 \pm 7.6$
$\Omega_\Lambda$	0.6909	$0.694 \pm 0.018$	$100\theta_*$	1.04103	$1.04090 \pm 0.00071$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.68$ ;  $\Delta\chi_{\text{eff}}^2 = -0.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.27$ ;  $R - 1 = 0.00852$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 ( $\Delta$  -0.14) plik\_dx11dr2\_HM\_v18\_TT: 763.57 ( $\Delta$  0.15) SN - JLA December\_2013: 706.68 ( $\Delta$  -0.08)

### 11.3 base\_nnu\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022271	$0.02232^{+0.00035}_{-0.00039}$	$\Omega_m$	0.3074	$0.305 \pm 0.019$	$D_A/\text{Gpc}$	13.915	$13.86 \pm 0.25$
$\Omega_c h^2$	0.11854	$0.1195^{+0.0037}_{-0.0043}$	$\Omega_m h^2$	0.14146	$0.1424^{+0.0039}_{-0.0045}$	$z_{\text{drag}}$	1059.59	$1059.8 \pm 1.2$
$100\theta_{\text{MC}}$	1.04104	$1.04097 \pm 0.00056$	$\Omega_m h^3$	0.0960	$0.0976^{+0.0057}_{-0.0068}$	$r_{\text{drag}}$	147.59	$146.9 \pm 2.8$
$\tau$	0.0666	$0.069 \pm 0.020$	$\sigma_8$	0.8158	$0.820^{+0.018}_{-0.021}$	$k_D$	0.14027	$0.1407 \pm 0.0020$
$N_{\text{eff}}$	3.047	$3.13^{+0.29}_{-0.34}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4520 \pm 0.0089$	$100\theta_D$	0.16096	$0.16115^{+0.00064}_{-0.00073}$
$\ln(10^{10} A_s)$	3.0638	$3.070 \pm 0.042$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.6086 \pm 0.0089$	$z_{\text{eq}}$	3365	$3353 \pm 69$
$n_s$	0.9684	$0.971 \pm 0.015$	$\sigma_8/h^{0.5}$	0.9905	$0.991 \pm 0.011$	$k_{\text{eq}}$	0.010270	$0.01029 \pm 0.00015$
$y_{\text{cal}}$	1.00014	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4480	$2.446 \pm 0.030$	$100\theta_{\text{eq}}$	0.8199	$0.822^{+0.013}_{-0.015}$
$A_{217}^{\text{CIB}}$	67.2	$64.9 \pm 6.8$	$z_{\text{re}}$	8.89	$9.0 \pm 1.8$	$100\theta_{\text{s,eq}}$	0.4529	$0.4542^{+0.0064}_{-0.0075}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.141	$2.156^{+0.084}_{-0.098}$	$r_{\text{drag}}/D_V(0.57)$	0.07182	$0.07202^{+0.00098}_{-0.0011}$
$A_{143}^{\text{tSZ}}$	7.18	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8739	$1.877 \pm 0.021$	$H(0.57)$	93.08	$93.7^{+2.3}_{-2.7}$
$A_{100}^{\text{PS}}$	254.0	$262 \pm 29$	$D_{40}$	1224.3	$1223 \pm 20$	$D_A(0.57)$	1384.8	$1375 \pm 45$
$A_{143}^{\text{PS}}$	39.1	$45 \pm 9$	$D_{220}$	5715.0	$5716 \pm 42$	$F_{\text{AP}}(0.57)$	0.67499	$0.6742 \pm 0.0049$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{810}$	2532.7	$2533 \pm 14$	$f\sigma_8(0.57)$	0.4732	$0.4744 \pm 0.0077$
$A_{217}^{\text{PS}}$	97.4	$96 \pm 10$	$D_{1420}$	815.1	$814.2 \pm 5.2$	$\sigma_8(0.57)$	0.6078	$0.612^{+0.017}_{-0.020}$
$A^{\text{kSZ}}$	0.00	$< 5.31$	$D_{2000}$	230.26	$229.7 \pm 2.2$	$f_{2000}^{143}$	29.90	$31.0 \pm 3.4$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.8$	$n_{\text{s},0.002}$	0.9684	$0.971 \pm 0.015$	$f_{2000}^{143 \times 217}$	32.51	$33.2 \pm 2.5$
$A_{143}^{\text{dustTT}}$	9.12	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.24536	$0.2464 \pm 0.0043$	$f_{2000}^{217}$	106.14	$106.7 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.76	$17.3 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24668	$0.2477 \pm 0.0043$	$\chi_{\text{lensing}}^2$	9.24	$10.0 \pm 1.6$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.5$	$10^5 D/H$	2.610	$2.628 \pm 0.068$	$\chi_{\text{lowTEB}}^2$	10494.83	$10495.6 \pm 2.0$
$c_{100}$	0.99788	$0.99788 \pm 0.00077$	Age/Gyr	13.797	$13.72 \pm 0.32$	$\chi_{\text{plik}}^2$	766.2	$780.5 \pm 6.3$
$c_{217}$	0.99600	$0.9960 \pm 0.0015$	$z_*$	1089.916	$1090.01 \pm 0.48$	$\chi_{\text{prior}}^2$	2.14	$7.4 \pm 3.6$
$H_0$	67.83	$68.5^{+2.5}_{-3.0}$	$r_*$	144.88	$144.3 \pm 2.6$	$\chi_{\text{CMB}}^2$	11270.3	$11286.2 \pm 6.2$
$\Omega_\Lambda$	0.6926	$0.695 \pm 0.019$	$100\theta_*$	1.04123	$1.04111 \pm 0.00070$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.28$ ;  $R - 1 = 0.01075$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.24 ( $\Delta$  0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.83 ( $\Delta$  -0.02) plik\_dx11dr2\_HM\_v18.TT: 766.22 ( $\Delta$  -0.10)

#### 11.4 base\_nnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022402	$0.02242 \pm 0.00031$	$\Omega_m$	0.3056	$0.304 \pm 0.016$	$D_A/\text{Gpc}$	13.784	$13.75 \pm 0.21$
$\Omega_c h^2$	0.12093	$0.1214 \pm 0.0037$	$\Omega_m h^2$	0.14398	$0.1445 \pm 0.0039$	$z_{\text{drag}}$	1060.20	$1060.3 \pm 1.0$
$100\theta_{\text{MC}}$	1.04080	$1.04075 \pm 0.00056$	$\Omega_m h^3$	0.0988	$0.0998 \pm 0.0051$	$r_{\text{drag}}$	146.12	$145.8 \pm 2.3$
$\tau$	0.0843	$0.085 \pm 0.021$	$\sigma_8$	0.8379	$0.839 \pm 0.020$	$k_D$	0.14139	$0.1416 \pm 0.0017$
$N_{\text{eff}}$	3.186	$3.23 \pm 0.26$	$\sigma_8 \Omega_m^{0.5}$	0.4632	$0.463 \pm 0.013$	$100\theta_D$	0.16119	$0.16131 \pm 0.00060$
$\ln(10^{10} A_s)$	3.1061	$3.108 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623 \pm 0.014$	$z_{\text{eq}}$	3362	$3355 \pm 59$
$n_s$	0.9731	$0.975 \pm 0.012$	$\sigma_8/h^{0.5}$	1.0114	$1.011 \pm 0.019$	$k_{\text{eq}}$	0.010357	$0.01036 \pm 0.00016$
$y_{\text{cal}}$	1.00041	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4897	$2.487 \pm 0.046$	$100\theta_{\text{eq}}$	0.8206	$0.822 \pm 0.012$
$A_{217}^{\text{CIB}}$	67.3	$64.5 \pm 6.7$	$z_{\text{re}}$	10.55	$10.5^{+2.0}_{-1.7}$	$100\theta_{\text{s,eq}}$	0.4532	$0.4540 \pm 0.0059$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.233	$2.240 \pm 0.096$	$r_{\text{drag}}/D_V(0.57)$	0.07188	$0.07200 \pm 0.00091$
$A_{143}^{\text{tSZ}}$	7.18	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8869	$1.888 \pm 0.020$	$H(0.57)$	94.05	$94.4 \pm 2.0$
$A_{100}^{\text{PS}}$	254.0	$261 \pm 29$	$D_{40}$	1227.6	$1227 \pm 19$	$D_A(0.57)$	1369.5	$1364 \pm 35$
$A_{143}^{\text{PS}}$	39.5	$45 \pm 8$	$D_{220}$	5720.3	$5720 \pm 42$	$F_{\text{AP}}(0.57)$	0.67454	$0.6741 \pm 0.0042$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$D_{810}$	2536.3	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4856	$0.486 \pm 0.011$
$A_{217}^{\text{PS}}$	97.5	$97 \pm 10$	$D_{1420}$	814.8	$814.0 \pm 5.3$	$\sigma_8(0.57)$	0.6248	$0.626 \pm 0.017$
$A^{\text{kSZ}}$	0.01	$< 5.03$	$D_{2000}$	230.09	$229.7 \pm 2.2$	$f_{2000}^{143}$	30.09	$30.9 \pm 3.3$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9731	$0.975 \pm 0.012$	$f_{2000}^{143 \times 217}$	32.65	$33.1 \pm 2.5$
$A_{143}^{\text{dustTT}}$	9.02	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.24729	$0.2479 \pm 0.0035$	$f_{2000}^{217}$	106.27	$106.7 \pm 2.3$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.1 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24862	$0.2492 \pm 0.0035$	$\chi_{\text{lowTEB}}^2$	10495.93	$10496.8 \pm 2.7$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.5$	$10^5 D/H$	2.634	$2.646 \pm 0.066$	$\chi_{\text{plik}}^2$	764.2	$778.7 \pm 6.1$
$c_{100}$	0.99794	$0.99789 \pm 0.00078$	Age/Gyr	13.658	$13.62 \pm 0.26$	$\chi_{\text{H070p6}}^2$	0.349	$0.66 \pm 0.84$
$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$z_*$	1090.100	$1090.16 \pm 0.49$	$\chi_{\text{prior}}^2$	2.05	$7.4 \pm 3.6$
$H_0$	68.64	$69.0 \pm 2.2$	$r_*$	143.48	$143.2 \pm 2.2$	$\chi_{\text{CMB}}^2$	11260.1	$11275.5 \pm 5.8$
$\Omega_\Lambda$	0.6944	$0.696 \pm 0.016$	$100\theta_*$	1.04089	$1.04081 \pm 0.00066$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.49$ ;  $\Delta\chi_{\text{eff}}^2 = -0.33$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.57$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.00564$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d.2014.10.03.v5c\_Ap: 10495.93 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TT: 764.16 ( $\Delta$  0.50) Hubble - H070p6: 0.35 ( $\Delta$  -0.48)

## 11.5 base\_nnu\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232^{+0.00035}_{-0.00040}$	$\Omega_m$	$0.310 \pm 0.020$	$D_A/\text{Gpc}$	$13.83 \pm 0.25$
$\Omega_c h^2$	$0.1206 \pm 0.0040$	$\Omega_m h^2$	$0.1436 \pm 0.0042$	$z_{\text{drag}}$	$1059.9 \pm 1.2$
$100\theta_{\text{MC}}$	$1.04081 \pm 0.00057$	$\Omega_m h^3$	$0.0979^{+0.0058}_{-0.0068}$	$r_{\text{drag}}$	$146.6 \pm 2.8$
$\tau$	$0.082^{+0.018}_{-0.024}$	$\sigma_8$	$0.835^{+0.019}_{-0.024}$	$k_D$	$0.1410 \pm 0.0020$
$N_{\text{eff}}$	$3.14^{+0.30}_{-0.34}$	$\sigma_8 \Omega_m^{0.5}$	$0.465 \pm 0.013$	$100\theta_D$	$0.16113 \pm 0.00069$
$\ln(10^{10} A_s)$	$3.100^{+0.040}_{-0.051}$	$\sigma_8 \Omega_m^{0.25}$	$0.623 \pm 0.013$	$z_{\text{eq}}$	$3376 \pm 72$
$n_s$	$0.970 \pm 0.015$	$\sigma_8/h^{0.5}$	$1.012 \pm 0.019$	$k_{\text{eq}}$	$0.01036 \pm 0.00016$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.496 \pm 0.048$	$100\theta_{\text{eq}}$	$0.818^{+0.013}_{-0.015}$
$A_{217}^{\text{CIB}}$	$64.1 \pm 6.8$	$z_{\text{re}}$	$10.3 \pm 1.8$	$100\theta_{\text{s,eq}}$	$0.4519^{+0.0066}_{-0.0076}$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.222^{+0.083}_{-0.12}$	$r_{\text{drag}}/D_V(0.57)$	$0.0717^{+0.0010}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 2.0$	$10^9 A_s e^{-2\tau}$	$1.884 \pm 0.022$	$H(0.57)$	$93.6^{+2.3}_{-2.7}$
$A_{100}^{\text{PS}}$	$259 \pm 29$	$D_{40}$	$1233 \pm 22$	$D_A(0.57)$	$1379 \pm 46$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{220}$	$5717 \pm 42$	$F_{\text{AP}}(0.57)$	$0.6757 \pm 0.0052$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{810}$	$2535 \pm 14$	$f\sigma_8(0.57)$	$0.485^{+0.010}_{-0.011}$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{1420}$	$814.1 \pm 5.3$	$\sigma_8(0.57)$	$0.622^{+0.017}_{-0.022}$
$A^{\text{kSZ}}$	$< 4.76$	$D_{2000}$	$230.0 \pm 2.3$	$f_{2000}^{143}$	$30 \pm 3$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	$0.970 \pm 0.015$	$f_{2000}^{143 \times 217}$	$32.7 \pm 2.6$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$Y_{\text{P}}$	$0.2465 \pm 0.0043$	$f_{2000}^{217}$	$106.3 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	$17.1 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.2478 \pm 0.0043$	$\chi_{\text{lowTEB}}^2$	$10497.4 \pm 2.8$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.5$	$10^5 D/H$	$2.632 \pm 0.070$	$\chi_{\text{plik}}^2$	$778.2 \pm 8.0$
$c_{100}$	$0.99789 \pm 0.00078$	$\text{Age}/\text{Gyr}$	$13.72 \pm 0.33$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$c_{217}$	$0.9960 \pm 0.0015$	$z_*$	$1090.13 \pm 0.49$	$\chi_{\text{CMB}}^2$	$11275.6 \pm 7.8$
$H_0$	$68.1^{+2.6}_{-3.0}$	$r_*$	$143.9 \pm 2.7$		
$\Omega_\Lambda$	$0.690 \pm 0.020$	$100\theta_*$	$1.04095 \pm 0.00071$		

$$\bar{\chi}_{\text{eff}}^2 = 11282.96; \Delta\bar{\chi}_{\text{eff}}^2 = 1.32; R - 1 = 0.00790$$

## 11.6 base\_nnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022167	$0.02220 \pm 0.00024$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.084$	Age/Gyr	13.925	$13.88 \pm 0.22$
$\Omega_c h^2$	0.11830	$0.1191 \pm 0.0031$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$z_*$	1089.920	$1090.00 \pm 0.36$
$100\theta_{\text{MC}}$	1.040933	$1.04087 \pm 0.00045$	$A_{143 \times 217}^{\text{dust}TE}$	0.341	$0.339 \pm 0.081$	$r_*$	145.58	$145.1 \pm 1.9$
$\tau$	0.0778	$0.077 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.667	$1.67 \pm 0.26$	$100\theta_*$	1.04120	$1.04111 \pm 0.00056$
$N_{\text{eff}}$	2.938	$2.99 \pm 0.20$	$c_{100}$	0.99823	$0.99817 \pm 0.00076$	$D_A/\text{Gpc}$	13.982	$13.94 \pm 0.18$
$\ln(10^{10} A_s)$	3.0869	$3.088 \pm 0.038$	$c_{217}$	0.99587	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.25	$1059.42 \pm 0.86$
$n_s$	0.9607	$0.9620 \pm 0.0097$	$H_0$	66.52	$66.8 \pm 1.6$	$r_{\text{drag}}$	148.32	$147.9 \pm 2.0$
$y_{\text{cal}}$	1.00032	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6811	$0.682 \pm 0.012$	$k_D$	0.13984	$0.1402 \pm 0.0015$
$A_{217}^{\text{CIB}}$	64.2	$63.5 \pm 6.6$	$\Omega_m$	0.3189	$0.318 \pm 0.012$	$100\theta_D$	0.160680	$0.16079 \pm 0.00043$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.35	—	$\Omega_m h^2$	0.14111	$0.1419 \pm 0.0032$	$z_{\text{eq}}$	3406.3	$3403 \pm 41$
$A_{143}^{\text{tSZ}}$	6.98	$5.4 \pm 1.9$	$\Omega_m h^3$	0.09387	$0.0949 \pm 0.0041$	$k_{\text{eq}}$	0.010321	$0.01034 \pm 0.00012$
$A_{100}^{\text{PS}}$	252.0	$259 \pm 28$	$\sigma_8$	0.8256	$0.828 \pm 0.018$	$100\theta_{\text{eq}}$	0.8119	$0.8127 \pm 0.0078$
$A_{143}^{\text{PS}}$	42.8	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4662	$0.4664 \pm 0.0098$	$100\theta_{s,\text{eq}}$	0.44881	$0.4492 \pm 0.0039$
$A_{143 \times 217}^{\text{PS}}$	42.4	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.07119	$0.07126 \pm 0.00060$
$A_{217}^{\text{PS}}$	101.6	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0123	$1.012 \pm 0.017$	$H(0.57)$	92.07	$92.4 \pm 1.5$
$A^{\text{kSZ}}$	0.00	$< 3.95$	$\langle d^2 \rangle^{1/2}$	2.5104	$2.508 \pm 0.039$	$D_A(0.57)$	1405.9	$1400 \pm 28$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$z_{\text{re}}$	9.94	$9.9^{+1.8}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67790	$0.6776 \pm 0.0030$
$A_{143}^{\text{dust}TT}$	8.90	$8.9 \pm 1.8$	$10^9 A_s$	2.191	$2.195 \pm 0.083$	$f\sigma_8(0.57)$	0.4819	$0.4826 \pm 0.0095$
$A_{143 \times 217}^{\text{dust}TT}$	17.77	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8752	$1.878 \pm 0.018$	$\sigma_8(0.57)$	0.6124	$0.614 \pm 0.015$
$A_{217}^{\text{dust}TT}$	82.2	$81.7 \pm 7.4$	$D_{40}$	1245.0	$1245 \pm 16$	$f_{2000}^{143}$	28.37	$29.2 \pm 2.9$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0811 \pm 0.0057$	$D_{220}$	5728.0	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	31.57	$31.9 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0485	$0.0486 \pm 0.0050$	$D_{810}$	2535.1	$2535 \pm 14$	$f_{2000}^{217}$	105.13	$105.6 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.0996 \pm 0.032$	$D_{1420}$	815.68	$815.0 \pm 4.9$	$\chi_{\text{lowTEB}}^2$	10497.53	$10498.2 \pm 2.3$
$A_{143}^{\text{dust}EE}$	0.1001	$0.0999 \pm 0.0069$	$D_{2000}$	231.12	$230.7 \pm 1.9$	$\chi_{\text{plik}}^2$	2431.2	$2451.0 \pm 6.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2246	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9607	$0.9620 \pm 0.0097$	$\chi_{\text{prior}}^2$	6.5	$19.2 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$Y_P$	0.24381	$0.2445 \pm 0.0029$	$\chi_{\text{CMB}}^2$	12928.7	$12949.2 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1413	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24513	$0.2458 \pm 0.0029$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.5918	$2.603 \pm 0.047$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.24$ ;  $\Delta\chi_{\text{eff}}^2 = -0.32$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.38$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.69$ ;  $R - 1 = 0.00667$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.53 ( $\Delta$  0.60) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.18 ( $\Delta$  -0.47)

## 11.7 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022223	$0.02224 \pm 0.00024$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.302 \pm 0.084$	Age/Gyr	13.866	$13.85 \pm 0.21$
$\Omega_c h^2$	0.11884	$0.1192 \pm 0.0031$	$A_{143}^{\text{dust}TE}$	0.156	$0.154 \pm 0.054$	$z_*$	1089.948	$1089.98 \pm 0.36$
$100\theta_{\text{MC}}$	1.040879	$1.04086 \pm 0.00045$	$A_{143 \times 217}^{\text{dust}TE}$	0.342	$0.338 \pm 0.081$	$r_*$	145.12	$144.9 \pm 1.9$
$\tau$	0.0790	$0.079 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.26$	$100\theta_*$	1.04112	$1.04108 \pm 0.00056$
$N_{\text{eff}}$	2.992	$3.02 \pm 0.20$	$c_{100}$	0.99820	$0.99817 \pm 0.00076$	$D_A/\text{Gpc}$	13.939	$13.92 \pm 0.18$
$\ln(10^{10} A_s)$	3.0904	$3.092 \pm 0.038$	$c_{217}$	0.99585	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.47	$1059.55 \pm 0.84$
$n_s$	0.9633	$0.9637 \pm 0.0094$	$H_0$	66.99	$67.1 \pm 1.6$	$r_{\text{drag}}$	147.84	$147.6 \pm 2.0$
$y_{\text{cal}}$	1.00027	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6843	$0.685 \pm 0.011$	$k_D$	0.14018	$0.1403 \pm 0.0015$
$A_{217}^{\text{CIB}}$	65.3	$63.6 \pm 6.6$	$\Omega_m$	0.3157	$0.315 \pm 0.011$	$100\theta_D$	0.160786	$0.16083 \pm 0.00043$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.14170	$0.1421 \pm 0.0032$	$z_{\text{eq}}$	3395.7	$3394 \pm 38$
$A_{143}^{\text{tSZ}}$	7.16	$5.4 \pm 1.9$	$\Omega_m h^3$	0.09493	$0.0954 \pm 0.0040$	$k_{\text{eq}}$	0.010326	$0.01034 \pm 0.00012$
$A_{100}^{\text{PS}}$	253.4	$259 \pm 28$	$\sigma_8$	0.8279	$0.829 \pm 0.018$	$100\theta_{\text{eq}}$	0.8140	$0.8143 \pm 0.0074$
$A_{143}^{\text{PS}}$	40.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.4656 \pm 0.0097$	$100\theta_{s,\text{eq}}$	0.44985	$0.4500 \pm 0.0037$
$A_{143 \times 217}^{\text{PS}}$	38.3	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6206	$0.621 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.07135	$0.07138 \pm 0.00058$
$A_{217}^{\text{PS}}$	100.0	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0114	$1.012 \pm 0.017$	$H(0.57)$	92.51	$92.7 \pm 1.5$
$A^{\text{kSZ}}$	0.00	$< 4.00$	$\langle d^2 \rangle^{1/2}$	2.5049	$2.506 \pm 0.039$	$D_A(0.57)$	1397.7	$1395 \pm 27$
$A_{100}^{\text{dust}TT}$	7.31	$7.4 \pm 1.9$	$z_{\text{re}}$	10.05	$10.0^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67710	$0.6770 \pm 0.0028$
$A_{143}^{\text{dust}TT}$	8.90	$8.9 \pm 1.8$	$10^9 A_s$	2.199	$2.204 \pm 0.083$	$f\sigma_8(0.57)$	0.4824	$0.4830 \pm 0.0095$
$A_{143 \times 217}^{\text{dust}TT}$	17.45	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8773	$1.879 \pm 0.018$	$\sigma_8(0.57)$	0.6148	$0.616 \pm 0.015$
$A_{217}^{\text{dust}TT}$	81.8	$81.7 \pm 7.5$	$D_{40}$	1241.3	$1243 \pm 16$	$f_{2000}^{143}$	28.77	$29.2 \pm 2.9$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0812 \pm 0.0057$	$D_{220}$	5727.2	$5731 \pm 39$	$f_{2000}^{143 \times 217}$	31.84	$32.0 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0487 \pm 0.0050$	$D_{810}$	2534.7	$2535 \pm 14$	$f_{2000}^{217}$	105.45	$105.7 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.1009	$0.0996 \pm 0.032$	$D_{1420}$	815.21	$815.0 \pm 4.9$	$\chi_{\text{lowTEB}}^2$	10497.16	$10498.0 \pm 2.3$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1000 \pm 0.0069$	$D_{2000}$	230.79	$230.6 \pm 1.9$	$\chi_{\text{plik}}^2$	2431.4	$2451.1 \pm 6.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2225	$0.224 \pm 0.046$	$n_{s,0.002}$	0.9633	$0.9637 \pm 0.0094$	$\chi_{\text{JLA}}^2$	706.886	$706.97 \pm 0.42$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P$	0.24458	$0.2449 \pm 0.0028$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24591	$0.2462 \pm 0.0028$	$\chi_{\text{CMB}}^2$	12928.5	$12949.1 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.6000	$2.605 \pm 0.047$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.33$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.70$ ;  $R - 1 = 0.00924$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.16 ( $\Delta$  -0.20) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.40 ( $\Delta$  -0.22) SN - JLA December\_2013: 706.89 ( $\Delta$  0.03)

## 11.8 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022137	$0.02216 \pm 0.00023$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.083$	Age/Gyr	13.959	$13.93 \pm 0.21$
$\Omega_c h^2$	0.11732	$0.1178 \pm 0.0030$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.053$	$z_*$	1089.831	$1089.89 \pm 0.35$
$100\theta_{\text{MC}}$	1.041072	$1.04103 \pm 0.00043$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.341 \pm 0.081$	$r_*$	146.05	$145.7 \pm 1.9$
$\tau$	0.0599	$0.060 \pm 0.014$	$A_{217}^{\text{dust}TE}$	1.675	$1.67 \pm 0.25$	$100\theta_*$	1.04138	$1.04131 \pm 0.00054$
$N_{\text{eff}}$	2.900	$2.94 \pm 0.20$	$c_{100}$	0.99820	$0.99816 \pm 0.00077$	$D_A/\text{Gpc}$	14.025	$14.00 \pm 0.17$
$\ln(10^{10} A_s)$	3.0476	$3.049 \pm 0.029$	$c_{217}$	0.99590	$0.9961 \pm 0.0015$	$z_{\text{drag}}$	1059.09	$1059.19 \pm 0.82$
$n_s$	0.9598	$0.9606 \pm 0.0092$	$H_0$	66.46	$66.7 \pm 1.5$	$r_{\text{drag}}$	148.81	$148.5 \pm 1.9$
$y_{\text{cal}}$	1.00004	$1.0002 \pm 0.0025$	$\Omega_\Lambda$	0.6828	$0.684^{+0.012}_{-0.011}$	$k_D$	0.13945	$0.1397 \pm 0.0014$
$A_{217}^{\text{CIB}}$	65.8	$64.2 \pm 6.7$	$\Omega_m$	0.3172	$0.316 \pm 0.011$	$100\theta_D$	0.160632	$0.16072 \pm 0.00042$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.20	—	$\Omega_m h^2$	0.14010	$0.1406 \pm 0.0031$	$z_{\text{eq}}$	3399.0	$3395 \pm 39$
$A_{143}^{\text{tSZ}}$	7.15	$5.4 \pm 2.0$	$\Omega_m h^3$	0.09311	$0.0938 \pm 0.0039$	$k_{\text{eq}}$	0.010272	$0.01029 \pm 0.00012$
$A_{100}^{\text{PS}}$	254.6	$262 \pm 28$	$\sigma_8$	0.8075	$0.809 \pm 0.013$	$100\theta_{\text{eq}}$	0.8132	$0.8140 \pm 0.0075$
$A_{143}^{\text{PS}}$	40.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4548	$0.4548 \pm 0.0069$	$100\theta_{s,\text{eq}}$	0.44952	$0.4499 \pm 0.0038$
$A_{143 \times 217}^{\text{PS}}$	38.1	$39 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6060	$0.6065 \pm 0.0079$	$r_{\text{drag}}/D_V(0.57)$	0.07130	$0.07136 \pm 0.00058$
$A_{217}^{\text{PS}}$	99.2	$97^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9905	$0.990 \pm 0.010$	$H(0.57)$	91.87	$92.1 \pm 1.5$
$A^{\text{kSZ}}$	0.00	$< 4.40$	$\langle d^2 \rangle^{1/2}$	2.4600	$2.459 \pm 0.026$	$D_A(0.57)$	1408.2	$1404 \pm 27$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$z_{\text{re}}$	8.23	$8.2^{+1.5}_{-1.3}$	$F_{\text{AP}}(0.57)$	0.67748	$0.6772 \pm 0.0028$
$A_{143}^{\text{dust}TT}$	9.03	$9.0 \pm 1.8$	$10^9 A_s$	2.106	$2.111^{+0.058}_{-0.066}$	$f\sigma_8(0.57)$	0.4709	$0.4714 \pm 0.0064$
$A_{143 \times 217}^{\text{dust}TT}$	17.57	$17.2 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8686	$1.871 \pm 0.018$	$\sigma_8(0.57)$	0.5993	$0.601 \pm 0.012$
$A_{217}^{\text{dust}TT}$	81.7	$81.9 \pm 7.6$	$D_{40}$	1237.3	$1238 \pm 15$	$f_{2000}^{143}$	28.82	$29.7 \pm 2.9$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0810 \pm 0.0057$	$D_{220}$	5724.1	$5726 \pm 39$	$f_{2000}^{143 \times 217}$	31.85	$32.3 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0487	$0.0487 \pm 0.0050$	$D_{810}$	2532.8	$2533 \pm 14$	$f_{2000}^{217}$	105.36	$105.8 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.1000	$0.099 \pm 0.033$	$D_{1420}$	815.64	$815.0 \pm 4.8$	$\chi_{\text{lensing}}^2$	9.64	$10.3 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.0999	$0.1000 \pm 0.0069$	$D_{2000}$	230.82	$230.5 \pm 1.8$	$\chi_{\text{lowTEB}}^2$	10496.14	$10496.7 \pm 1.7$
$A_{143 \times 217}^{\text{dust}EE}$	0.2253	$0.226 \pm 0.046$	$n_{s,0.002}$	0.9598	$0.9606 \pm 0.0092$	$\chi_{\text{plik}}^2$	2434.3	$2453.6 \pm 6.8$
$A_{217}^{\text{dust}EE}$	0.658	$0.66^{+0.12}_{-0.14}$	$Y_P$	0.24328	$0.2438 \pm 0.0028$	$\chi_{\text{prior}}^2$	6.6	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1401	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24460	$0.2451 \pm 0.0028$	$\chi_{\text{CMB}}^2$	12940.0	$12960.5 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	$10^5 D/H$	2.5842	$2.593 \pm 0.046$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.50$ ;  $\bar{\chi}_{\text{eff}}^2 = 12979.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.73$ ;  $R - 1 = 0.02934$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.64 ( $\Delta$  -0.13) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.14 ( $\Delta$  0.85) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.25 ( $\Delta$  -0.66)



## 11.9 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022284	$0.02229 \pm 0.00023$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.084$	Age/Gyr	13.801	$13.79 \pm 0.20$
$\Omega_c h^2$	0.11955	$0.1199 \pm 0.0030$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$z_*$	1089.997	$1090.03 \pm 0.36$
$100\theta_{\text{MC}}$	1.040807	$1.04078 \pm 0.00043$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.338 \pm 0.081$	$r_*$	144.58	$144.4 \pm 1.8$
$\tau$	0.0827	$0.081 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.665	$1.67 \pm 0.26$	$100\theta_*$	1.04100	$1.04096 \pm 0.00053$
$N_{\text{eff}}$	3.052	$3.07 \pm 0.19$	$c_{100}$	0.99820	$0.99816 \pm 0.00076$	$D_A/\text{Gpc}$	13.889	$13.87 \pm 0.17$
$\ln(10^{10} A_s)$	3.0999	$3.098 \pm 0.037$	$c_{217}$	0.99596	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.70	$1059.77 \pm 0.79$
$n_s$	0.9662	$0.9660 \pm 0.0089$	$H_0$	67.48	$67.6 \pm 1.5$	$r_{\text{drag}}$	147.28	$147.1 \pm 1.9$
$y_{\text{cal}}$	1.00035	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6871	$0.687 \pm 0.011$	$k_D$	0.14058	$0.1407 \pm 0.0014$
$A_{217}^{\text{CIB}}$	66.1	$63.8 \pm 6.6$	$\Omega_m$	0.3129	$0.313 \pm 0.011$	$100\theta_D$	0.160898	$0.16094 \pm 0.00041$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.17	—	$\Omega_m h^2$	0.14248	$0.1429 \pm 0.0031$	$z_{\text{eq}}$	3386.4	$3388 \pm 38$
$A_{143}^{\text{tSZ}}$	7.14	$5.4 \pm 1.9$	$\Omega_m h^3$	0.09614	$0.0966 \pm 0.0038$	$k_{\text{eq}}$	0.010340	$0.01036 \pm 0.00012$
$A_{100}^{\text{PS}}$	255.4	$260 \pm 28$	$\sigma_8$	0.8329	$0.833 \pm 0.018$	$100\theta_{\text{eq}}$	0.8158	$0.8157 \pm 0.0073$
$A_{143}^{\text{PS}}$	40.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.4660 \pm 0.0098$	$100\theta_{s,\text{eq}}$	0.45075	$0.4507 \pm 0.0037$
$A_{143 \times 217}^{\text{PS}}$	37.2	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.623 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.07149	$0.07148 \pm 0.00057$
$A_{217}^{\text{PS}}$	99.0	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0140	$1.013 \pm 0.017$	$H(0.57)$	92.98	$93.1 \pm 1.4$
$A^{\text{kSZ}}$	0.00	$< 4.12$	$\langle d^2 \rangle^{1/2}$	2.5067	$2.505 \pm 0.039$	$D_A(0.57)$	1389.2	$1388 \pm 26$
$A_{100}^{\text{dust}TT}$	7.42	$7.5 \pm 1.9$	$z_{\text{re}}$	10.40	$10.2^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67639	$0.6765 \pm 0.0027$
$A_{143}^{\text{dust}TT}$	9.00	$8.9 \pm 1.8$	$10^9 A_s$	2.220	$2.216 \pm 0.083$	$f\sigma_8(0.57)$	0.4846	$0.4845 \pm 0.0094$
$A_{143 \times 217}^{\text{dust}TT}$	17.57	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8811	$1.883 \pm 0.017$	$\sigma_8(0.57)$	0.6193	$0.619 \pm 0.014$
$A_{217}^{\text{dust}TT}$	81.8	$81.7 \pm 7.5$	$D_{40}$	1238.7	$1240 \pm 15$	$f_{2000}^{143}$	29.06	$29.5 \pm 2.9$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0813 \pm 0.0058$	$D_{220}$	5727.2	$5731 \pm 39$	$f_{2000}^{143 \times 217}$	32.01	$32.2 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0489 \pm 0.0050$	$D_{810}$	2535.6	$2536 \pm 14$	$f_{2000}^{217}$	105.60	$105.9 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.099 \pm 0.032$	$D_{1420}$	815.10	$814.8 \pm 4.9$	$\chi_{\text{lowTEB}}^2$	10497.09	$10497.8 \pm 2.4$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1002 \pm 0.0069$	$D_{2000}$	230.63	$230.4 \pm 1.8$	$\chi_{\text{plik}}^2$	2431.6	$2451.4 \pm 6.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2221	$0.223 \pm 0.046$	$n_{s,0.002}$	0.9662	$0.9660 \pm 0.0089$	$\chi_{\text{H070p6}}^2$	0.88	$1.03 \pm 0.84$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$Y_P$	0.24544	$0.2457 \pm 0.0027$	$\chi_{\text{prior}}^2$	6.9	$19.4 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1420	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24677	$0.2470 \pm 0.0027$	$\chi_{\text{CMB}}^2$	12928.7	$12949.2 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$10^5 D/H$	2.6099	$2.614 \pm 0.045$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.50$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.57$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.00977$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.09 ( $\Delta$  0.08) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.62 ( $\Delta$  -0.15) Hubble - H070p6: 0.88 ( $\Delta$  -0.02)

### 11.10 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02220 \pm 0.00024$	$A_{100 \times 217}^{\text{dust}TE}$	$0.302 \pm 0.084$	Age/Gyr	$13.87 \pm 0.22$
$\Omega_c h^2$	$0.1191 \pm 0.0031$	$A_{143}^{\text{dust}TE}$	$0.155 \pm 0.054$	$z_*$	$1089.99 \pm 0.36$
$100\theta_{\text{MC}}$	$1.04087 \pm 0.00045$	$A_{143 \times 217}^{\text{dust}TE}$	$0.338 \pm 0.081$	$r_*$	$145.1 \pm 1.9$
$\tau$	$0.079^{+0.016}_{-0.019}$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.26$	$100\theta_*$	$1.04111 \pm 0.00056$
$N_{\text{eff}}$	$2.99 \pm 0.20$	$c_{100}$	$0.99817 \pm 0.00076$	$D_A/\text{Gpc}$	$13.94 \pm 0.18$
$\ln(10^{10} A_s)$	$3.090^{+0.034}_{-0.040}$	$c_{217}$	$0.9959 \pm 0.0014$	$z_{\text{drag}}$	$1059.43 \pm 0.86$
$n_s$	$0.9622 \pm 0.0096$	$H_0$	$66.9 \pm 1.6$	$r_{\text{drag}}$	$147.8 \pm 2.0$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	$0.682 \pm 0.012$	$k_D$	$0.1402 \pm 0.0015$
$A_{217}^{\text{CIB}}$	$63.5 \pm 6.6$	$\Omega_m$	$0.318 \pm 0.012$	$100\theta_D$	$0.16080 \pm 0.00043$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1419 \pm 0.0032$	$z_{\text{eq}}$	$3402 \pm 40$
$A_{143}^{\text{tSZ}}$	$5.4 \pm 1.9$	$\Omega_m h^3$	$0.0950 \pm 0.0041$	$k_{\text{eq}}$	$0.01034 \pm 0.00012$
$A_{100}^{\text{PS}}$	$259 \pm 28$	$\sigma_8$	$0.828^{+0.017}_{-0.019}$	$100\theta_{\text{eq}}$	$0.8129 \pm 0.0077$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.4667 \pm 0.0097$	$100\theta_{\text{s,eq}}$	$0.4493 \pm 0.0039$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.622 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	$0.07127 \pm 0.00060$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$\sigma_8/h^{0.5}$	$1.013 \pm 0.016$	$H(0.57)$	$92.5 \pm 1.5$
$A^{\text{kSZ}}$	$< 3.94$	$\langle d^2 \rangle^{1/2}$	$2.510 \pm 0.038$	$D_A(0.57)$	$1400 \pm 28$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$z_{\text{re}}$	$9.97 \pm 1.5$	$F_{\text{AP}}(0.57)$	$0.6775 \pm 0.0029$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$10^9 A_s$	$2.200^{+0.072}_{-0.091}$	$f\sigma_8(0.57)$	$0.4831 \pm 0.0091$
$A_{143 \times 217}^{\text{dust}TT}$	$16.9 \pm 4.2$	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.018$	$\sigma_8(0.57)$	$0.615^{+0.013}_{-0.016}$
$A_{217}^{\text{dust}TT}$	$81.7 \pm 7.5$	$D_{40}$	$1245 \pm 16$	$f_{2000}^{143}$	$29.1 \pm 2.9$
$A_{100}^{\text{dust}EE}$	$0.0811 \pm 0.0057$	$D_{220}$	$5730 \pm 39$	$f_{2000}^{143 \times 217}$	$31.9 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0486 \pm 0.0050$	$D_{810}$	$2535 \pm 14$	$f_{2000}^{217}$	$105.6 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0996 \pm 0.032$	$D_{1420}$	$815.0 \pm 4.9$	$\chi_{\text{lowTEB}}^2$	$10498.1 \pm 2.3$
$A_{143}^{\text{dust}EE}$	$0.0999 \pm 0.0069$	$D_{2000}$	$230.7 \pm 1.9$	$\chi_{\text{plik}}^2$	$2450.9 \pm 6.8$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.047$	$n_{\text{s},0.002}$	$0.9622 \pm 0.0096$	$\chi_{\text{prior}}^2$	$19.2 \pm 5.5$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.2445 \pm 0.0029$	$\chi_{\text{CMB}}^2$	$12949.1 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.2459 \pm 0.0029$		
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$10^5 \text{D/H}$	$2.603 \pm 0.047$		

$\bar{\chi}_{\text{eff}}^2 = 12968.24$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.56$ ;  $R - 1 = 0.00849$

### 11.11 base\_nnu\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022311	$0.02235 \pm 0.00035$	$\sigma_8$	0.8017	$0.805 \pm 0.025$	$100\theta_*$	1.04160	$1.0414 \pm 0.0012$
$\Omega_c h^2$	0.1156	$0.1169^{+0.0061}_{-0.0075}$	$\sigma_8 \Omega_m^{0.5}$	0.4437	$0.444 \pm 0.015$	$D_A/\text{Gpc}$	14.056	$13.99 \pm 0.39$
$100\theta_{\text{MC}}$	1.04130	$1.04121 \pm 0.00095$	$\sigma_8 \Omega_m^{0.25}$	0.5964	$0.598 \pm 0.017$	$z_{\text{drag}}$	1059.36	$1059.6 \pm 1.5$
$\tau$	0.0603	$0.060 \pm 0.021$	$\sigma_8/h^{0.5}$	0.9776	$0.978 \pm 0.025$	$r_{\text{drag}}$	149.12	$148.4 \pm 4.4$
$N_{\text{eff}}$	2.896	$2.99^{+0.42}_{-0.50}$	$\langle d^2 \rangle^{1/2}$	2.412	$2.408 \pm 0.058$	$k_D$	0.13929	$0.1398^{+0.0029}_{-0.0033}$
$\ln(10^{10} A_s)$	3.0412	$3.043 \pm 0.047$	$z_{\text{re}}$	8.20	$8.1^{+2.3}_{-2.0}$	$100\theta_D$	0.16046	$0.1607^{+0.0011}_{-0.0012}$
$n_s$	0.9705	$0.973 \pm 0.015$	$10^9 A_s$	2.093	$2.099^{+0.094}_{-0.11}$	$z_{\text{eq}}$	3363	$3356 \pm 64$
$y_{\text{cal}}$	0.99998	$1.0002 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8553	$1.859 \pm 0.029$	$k_{\text{eq}}$	0.010160	$0.01019^{+0.00021}_{-0.00024}$
$A_{100}^{\text{dustTE}}$	0.1374	$0.136 \pm 0.038$	$D_{40}$	1207.4	$1205 \pm 26$	$100\theta_{\text{eq}}$	0.8204	$0.822 \pm 0.012$
$A_{100 \times 143}^{\text{dustTE}}$	0.1325	$0.133 \pm 0.029$	$D_{220}$	5683	$5679 \pm 56$	$100\theta_{\text{s,eq}}$	0.4532	$0.4539 \pm 0.0062$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.303 \pm 0.084$	$D_{810}$	2529.4	$2528 \pm 27$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07201 \pm 0.00090$
$A_{143}^{\text{dustTE}}$	0.151	$0.153 \pm 0.054$	$D_{1420}$	819.3	$818 \pm 16$	$H(0.57)$	92.19	$92.8^{+3.0}_{-3.6}$
$A_{143 \times 217}^{\text{dustTE}}$	0.332	$0.335 \pm 0.080$	$D_{2000}$	232.6	$231.9 \pm 6.9$	$D_A(0.57)$	1397	$1389 \pm 56$
$A_{217}^{\text{dustTE}}$	1.649	$1.65 \pm 0.25$	$n_{\text{s},0.002}$	0.9705	$0.973 \pm 0.015$	$F_{\text{AP}}(0.57)$	0.67472	$0.6743 \pm 0.0043$
$c_{100}$	0.99927	$0.9992 \pm 0.0010$	$Y_{\text{P}}$	0.2433	$0.2444 \pm 0.0063$	$f\sigma_8(0.57)$	0.4648	$0.466 \pm 0.014$
$H_0$	67.24	$67.8^{+2.9}_{-3.4}$	$Y_{\text{P}}^{\text{BBN}}$	0.2446	$0.2457 \pm 0.0063$	$\sigma_8(0.57)$	0.5976	$0.600 \pm 0.021$
$\Omega_\Lambda$	0.6936	$0.695 \pm 0.017$	$10^5 \text{D}/\text{H}$	2.550	$2.57^{+0.11}_{-0.13}$	$\chi_{\text{lowTEB}}^2$	10493.65	$10494.7 \pm 2.2$
$\Omega_{\text{m}}$	0.3064	$0.305 \pm 0.017$	Age/Gyr	13.932	$13.86 \pm 0.45$	$\chi_{\text{plikTE}}^2$	931.46	$939.4 \pm 4.6$
$\Omega_{\text{m}} h^2$	0.1385	$0.1399^{+0.0063}_{-0.0077}$	$z_*$	1089.45	$1089.60^{+0.77}_{-0.87}$	$\chi_{\text{prior}}^2$	1.95	$7.8 \pm 3.6$
$\Omega_{\text{m}} h^3$	0.0932	$0.0950^{+0.0077}_{-0.0099}$	$r_*$	146.41	$145.7 \pm 4.2$	$\chi_{\text{CMB}}^2$	11425.12	$11434.2 \pm 4.4$

Best-fit  $\chi_{\text{eff}}^2 = 11427.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.00488$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.65 ( $\Delta$  0.16) plik\_dx11dr2\_HM\_v18\_TE: 931.46 ( $\Delta$  -0.26)

## 11.12 base\_nnu\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02383	$0.0244^{+0.0025}_{-0.0023}$	$\sigma_8 \Omega_m^{0.5}$	0.4116	$0.414^{+0.031}_{-0.035}$	$D_A/\text{Gpc}$	14.15	$13.8^{+1.1}_{-1.5}$
$\Omega_c h^2$	0.1093	$0.117^{+0.020}_{-0.023}$	$\sigma_8 \Omega_m^{0.25}$	0.5685	$0.576 \pm 0.037$	$z_{\text{drag}}$	1062.3	$1064.0^{+8.3}_{-6.6}$
$100\theta_{\text{MC}}$	1.04058	$1.0401^{+0.0023}_{-0.0040}$	$\sigma_8/h^{0.5}$	0.9401	$0.941 \pm 0.045$	$r_{\text{drag}}$	149.5	$146^{+12}_{-18}$
$\tau$	0.0652	$0.068 \pm 0.022$	$\langle d^2 \rangle^{1/2}$	2.355	$2.350 \pm 0.090$	$k_D$	0.1402	$0.144 \pm 0.011$
$N_{\text{eff}}$	2.83	$3.3^{+1.4}_{-1.6}$	$z_{\text{re}}$	8.19	$8.4^{+2.2}_{-2.0}$	$100\theta_D$	0.15839	$0.1592 \pm 0.0023$
$\ln(10^{10} A_s)$	3.064	$3.075^{+0.086}_{-0.068}$	$10^9 A_s$	2.141	$2.17 \pm 0.16$	$z_{\text{eq}}$	3276	$3261^{+120}_{-150}$
$n_s$	0.9825	$0.991^{+0.038}_{-0.033}$	$10^9 A_s e^{-2\tau}$	1.879	$1.89^{+0.12}_{-0.067}$	$k_{\text{eq}}$	0.00985	$0.01008 \pm 0.00070$
$y_{\text{cal}}$	1.00000	$1.0000 \pm 0.0025$	$D_{40}$	1221.6	$1218 \pm 30$	$100\theta_{\text{eq}}$	0.8403	$0.846 \pm 0.030$
$A_{100}^{\text{dustEE}}$	0.0827	$0.0826 \pm 0.0059$	$D_{220}$	5963	$5991 \pm 260$	$100\theta_{s,\text{eq}}$	0.4623	$0.465 \pm 0.014$
$A_{100 \times 143}^{\text{dustEE}}$	0.0501	$0.0500 \pm 0.0053$	$D_{810}$	2593.0	$2588 \pm 42$	$r_{\text{drag}}/D_V(0.57)$	0.07356	$0.0741 \pm 0.0026$
$A_{100 \times 217}^{\text{dustEE}}$	0.0982	$0.099 \pm 0.032$	$D_{1420}$	850.0	$842 \pm 29$	$H(0.57)$	93.3	$97 \pm 10$
$A_{143}^{\text{dustEE}}$	0.1010	$0.1012 \pm 0.0071$	$D_{2000}$	244.3	$240^{+14}_{-16}$	$D_A(0.57)$	1364	$1328^{+140}_{-210}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2239	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9825	$0.991^{+0.038}_{-0.033}$	$F_{\text{AP}}(0.57)$	0.6665	$0.665^{+0.010}_{-0.014}$
$A_{217}^{\text{dustEE}}$	0.641	$0.65 \pm 0.13$	$Y_P$	0.2430	$0.248^{+0.023}_{-0.017}$	$f\sigma_8(0.57)$	0.4465	$0.452 \pm 0.029$
$H_0$	69.8	$73^{+10}_{-10}$	$Y_P^{\text{BBN}}$	0.2443	$0.249^{+0.023}_{-0.017}$	$\sigma_8(0.57)$	0.593	$0.608 \pm 0.052$
$\Omega_\Lambda$	0.7251	$0.730^{+0.055}_{-0.034}$	$10^5 D/H$	2.272	$2.34^{+0.24}_{-0.28}$	$\chi_{\text{lowTEB}}^2$	10493.70	$10494.9 \pm 2.6$
$\Omega_m$	0.2749	$0.270^{+0.034}_{-0.055}$	Age/Gyr	13.84	$13.5^{+1.2}_{-1.8}$	$\chi_{\text{plikEE}}^2$	750.93	$759.4 \pm 4.9$
$\Omega_m h^2$	0.1337	$0.142^{+0.022}_{-0.025}$	$z_*$	1087.09	$1087.5^{+1.9}_{-2.2}$	$\chi_{\text{prior}}^2$	4.15	$8.4 \pm 3.6$
$\Omega_m h^3$	0.0933	$0.106^{+0.025}_{-0.038}$	$r_*$	147.3	$144^{+11}_{-17}$	$\chi_{\text{CMB}}^2$	11244.62	$11254.3 \pm 4.8$
$\sigma_8$	0.785	$0.802 \pm 0.059$	$100\theta_*$	1.04075	$1.0400^{+0.0031}_{-0.0052}$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11262.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.82$ ;  $R - 1 = 0.01533$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.69 ( $\Delta$  0.08) plik\_dx11dr2\_HM\_v18\_EE: 750.93 ( $\Delta$  -0.27)

### 11.13 base\_nnu\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.021936	$0.02199 \pm 0.00040$	$\sigma_8$	0.7865	$0.787^{+0.023}_{-0.026}$	$100\theta_*$	1.04238	$1.0423 \pm 0.0014$
$\Omega_c h^2$	0.1121	$0.1130^{+0.0061}_{-0.0076}$	$\sigma_8 \Omega_m^{0.5}$	0.4483	$0.448 \pm 0.015$	$D_A/\text{Gpc}$	14.340	$14.30 \pm 0.43$
$100\theta_{\text{MC}}$	1.04183	$1.0418 \pm 0.0010$	$\sigma_8 \Omega_m^{0.25}$	0.5938	$0.594 \pm 0.016$	$z_{\text{drag}}$	1057.95	$1058.2 \pm 1.7$
$\tau$	0.0537	$0.052 \pm 0.019$	$\sigma_8/h^{0.5}$	0.9803	$0.979 \pm 0.024$	$r_{\text{drag}}$	152.36	$151.9 \pm 4.8$
$N_{\text{eff}}$	2.558	$2.63^{+0.42}_{-0.52}$	$\langle d^2 \rangle^{1/2}$	2.456	$2.448 \pm 0.064$	$k_D$	0.13705	$0.1375^{+0.0031}_{-0.0035}$
$\ln(10^{10} A_s)$	3.0181	$3.016 \pm 0.044$	$z_{\text{re}}$	7.53	$7.2^{+2.3}_{-1.8}$	$100\theta_D$	0.15985	$0.1600^{+0.0011}_{-0.0013}$
$n_s$	0.9483	$0.951 \pm 0.019$	$10^9 A_s$	2.045	$2.043^{+0.087}_{-0.099}$	$z_{\text{eq}}$	3426	$3422 \pm 74$
$y_{\text{cal}}$	0.99954	$0.99999 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8369	$1.841 \pm 0.033$	$k_{\text{eq}}$	0.010110	$0.01014 \pm 0.00022$
$A_{100}^{\text{dustTE}}$	0.1447	$0.137 \pm 0.038$	$D_{40}$	1245.7	$1244 \pm 33$	$100\theta_{\text{eq}}$	0.8081	$0.809 \pm 0.014$
$A_{100 \times 143}^{\text{dustTE}}$	0.1360	$0.133 \pm 0.029$	$D_{220}$	5713	$5715 \pm 59$	$100\theta_{\text{s,eq}}$	0.4470	$0.4475 \pm 0.0069$
$A_{100 \times 217}^{\text{dustTE}}$	0.315	$0.303 \pm 0.085$	$D_{810}$	2523.5	$2526 \pm 28$	$r_{\text{drag}}/D_V(0.57)$	0.07098	$0.07107 \pm 0.00099$
$A_{143}^{\text{dustTE}}$	0.156	$0.154 \pm 0.054$	$D_{1420}$	816.9	$817 \pm 16$	$H(0.57)$	89.49	$90.0^{+3.2}_{-3.8}$
$A_{143 \times 217}^{\text{dustTE}}$	0.344	$0.337 \pm 0.080$	$D_{2000}$	232.6	$232.6 \pm 6.9$	$D_A(0.57)$	1450	$1444 \pm 64$
$A_{217}^{\text{dustTE}}$	1.701	$1.65 \pm 0.26$	$n_{\text{s},0.002}$	0.9483	$0.951 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.6794	$0.6791 \pm 0.0051$
$c_{100}$	0.99908	$0.9992 \pm 0.0010$	$Y_{\text{P}}$	0.2383	$0.2391 \pm 0.0069$	$f\sigma_8(0.57)$	0.4605	$0.460 \pm 0.013$
$H_0$	64.37	$64.8^{+3.1}_{-3.6}$	$Y_{\text{P}}^{\text{BBN}}$	0.2396	$0.2404 \pm 0.0069$	$\sigma_8(0.57)$	0.5820	$0.583^{+0.019}_{-0.022}$
$\Omega_\Lambda$	0.6750	$0.676^{+0.022}_{-0.020}$	$10^5 \text{D/H}$	2.500	$2.51^{+0.11}_{-0.13}$	$\chi_{\text{lowEB}}^2$	5430.74	$5431.7 \pm 1.1$
$\Omega_{\text{m}}$	0.3250	$0.324^{+0.020}_{-0.022}$	Age/Gyr	14.31	$14.26 \pm 0.51$	$\chi_{\text{plikTE}}^2$	930.16	$938.1 \pm 4.3$
$\Omega_{\text{m}} h^2$	0.1346	$0.1356^{+0.0064}_{-0.0078}$	$z_*$	1089.26	$1089.34^{+0.75}_{-0.88}$	$\chi_{\text{prior}}^2$	1.73	$7.8 \pm 3.6$
$\Omega_{\text{m}} h^3$	0.0867	$0.0881^{+0.0076}_{-0.010}$	$r_*$	149.48	$149.0 \pm 4.6$	$\chi_{\text{CMB}}^2$	6360.90	$6369.8 \pm 4.4$

Best-fit  $\chi_{\text{eff}}^2 = 6362.64$ ;  $\Delta\chi_{\text{eff}}^2 = -1.26$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.26$ ;  $R - 1 = 0.00720$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.74 ( $\Delta$  -0.02) plik\_dx11dr2\_HM\_v18\_TE: 930.16 ( $\Delta$  -1.08)

### 11.14 base\_nnu\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.01826	$0.0212^{+0.0018}_{-0.0030}$	$\sigma_8 \Omega_m^{0.5}$	0.4527	$0.438^{+0.036}_{-0.041}$	$D_A/\text{Gpc}$	17.67	$15.7^{+1.9}_{-0.89}$
$\Omega_c h^2$	0.0748	$0.0947^{+0.0084}_{-0.021}$	$\sigma_8 \Omega_m^{0.25}$	0.5578	$0.569 \pm 0.033$	$z_{\text{drag}}$	1042.9	$1053.5^{+6.0}_{-10}$
$100\theta_{\text{MC}}$	1.05075	$1.0447^{+0.0049}_{-0.0035}$	$\sigma_8/h^{0.5}$	1.008	$0.976 \pm 0.052$	$r_{\text{drag}}$	191.3	$168^{+20}_{-10}$
$\tau$	0.0496	$0.055 \pm 0.019$	$\langle d^2 \rangle^{1/2}$	2.594	$2.49^{+0.13}_{-0.11}$	$k_D$	0.1138	$0.1283^{+0.0062}_{-0.014}$
$N_{\text{eff}}$	0.05	$< 1.83$	$z_{\text{re}}$	6.89	$7.2^{+2.0}_{-1.7}$	$100\theta_D$	0.15627	$0.1574^{+0.0017}_{-0.0022}$
$\ln(10^{10} A_s)$	2.856	$2.972^{+0.072}_{-0.10}$	$10^9 A_s$	1.738	$1.96^{+0.13}_{-0.21}$	$z_{\text{eq}}$	3718	$3509^{+210}_{-150}$
$n_s$	0.8685	$0.923^{+0.028}_{-0.053}$	$10^9 A_s e^{-2\tau}$	1.574	$1.754^{+0.095}_{-0.16}$	$k_{\text{eq}}$	0.00878	$0.00947^{+0.00040}_{-0.00072}$
$y_{\text{cal}}$	1.00008	$1.0000 \pm 0.0025$	$D_{40}$	1286.7	$1276 \pm 42$	$100\theta_{\text{eq}}$	0.7557	$0.795^{+0.026}_{-0.043}$
$A_{100}^{\text{dustEE}}$	0.0776	$0.0791 \pm 0.0061$	$D_{220}$	5477	$5778^{+270}_{-310}$	$100\theta_{s,\text{eq}}$	0.4220	$0.440^{+0.013}_{-0.020}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0443	$0.0460 \pm 0.0057$	$D_{810}$	2564.1	$2578 \pm 41$	$r_{\text{drag}}/D_V(0.57)$	0.06769	$0.0703^{+0.0019}_{-0.0033}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0991	$0.099 \pm 0.032$	$D_{1420}$	869.9	$855^{+27}_{-24}$	$H(0.57)$	69.6	$82.0^{+4.8}_{-13}$
$A_{143}^{\text{dustEE}}$	0.0953	$0.0970 \pm 0.0075$	$D_{2000}$	260.7	$250^{+14}_{-11}$	$D_A(0.57)$	1932	$1625^{+300}_{-200}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2220	$0.224 \pm 0.047$	$n_{s,0.002}$	0.8685	$0.923^{+0.028}_{-0.053}$	$F_{\text{AP}}(0.57)$	0.7045	$0.686^{+0.019}_{-0.015}$
$A_{217}^{\text{dustEE}}$	0.643	$0.65 \pm 0.13$	$Y_P$	0.1937	$0.220^{+0.011}_{-0.026}$	$f\sigma_8(0.57)$	0.4179	$0.437^{+0.023}_{-0.026}$
$H_0$	46.5	$58.2^{+5.0}_{-12}$	$Y_P^{\text{BBN}}$	0.1948	$0.221^{+0.011}_{-0.026}$	$\sigma_8(0.57)$	0.4898	$0.543^{+0.025}_{-0.058}$
$\Omega_\Lambda$	0.566	$0.643 \pm 0.068$	$10^5 D/H$	2.174	$2.25^{+0.21}_{-0.24}$	$\chi_{\text{lowEB}}^2$	5430.73	$5431.7 \pm 1.4$
$\Omega_m$	0.434	$0.357 \pm 0.068$	Age/Gyr	18.24	$15.8^{+2.3}_{-1.1}$	$\chi_{\text{plikEE}}^2$	746.48	$756.1 \pm 4.7$
$\Omega_m h^2$	0.0937	$0.1165^{+0.0092}_{-0.024}$	$z_*$	1087.28	$1087.4 \pm 1.8$	$\chi_{\text{prior}}^2$	2.90	$7.4 \pm 3.4$
$\Omega_m h^3$	0.0435	$0.0696^{+0.0086}_{-0.028}$	$r_*$	186.2	$164^{+20}_{-10}$	$\chi_{\text{CMB}}^2$	6177.21	$6187.8 \pm 4.9$
$\sigma_8$	0.6872	$0.740^{+0.035}_{-0.061}$	$100\theta_*$	1.0539	$1.0462^{+0.0065}_{-0.0040}$			

Best-fit  $\chi_{\text{eff}}^2 = 6180.11$ ;  $\Delta\chi_{\text{eff}}^2 = -4.79$ ;  $\bar{\chi}_{\text{eff}}^2 = 6195.27$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.70$ ;  $R - 1 = 0.01852$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.73 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_EE: 746.48 ( $\Delta$  -4.27)

### 11.15 base\_nnu\_plikHM\_TT\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.021697	$0.02176 \pm 0.00038$	$\Omega_m$	0.3532	$0.349 \pm 0.025$	$D_A/\text{Gpc}$	14.267	$14.18 \pm 0.27$
$\Omega_c h^2$	0.11591	$0.1171^{+0.0039}_{-0.0044}$	$\Omega_m h^2$	0.13825	$0.1395^{+0.0041}_{-0.0046}$	$z_{\text{drag}}$	1057.64	$1058.0 \pm 1.3$
$100\theta_{\text{MC}}$	1.04125	$1.04112 \pm 0.00060$	$\Omega_m h^3$	0.0865	$0.0885^{+0.0055}_{-0.0069}$	$r_{\text{drag}}$	151.58	$150.7 \pm 3.1$
$\tau$	0.0588	$0.060 \pm 0.019$	$\sigma_8$	0.8058	$0.809^{+0.019}_{-0.022}$	$k_D$	0.13768	$0.1383 \pm 0.0021$
$N_{\text{eff}}$	2.551	$2.66^{+0.29}_{-0.35}$	$\sigma_8 \Omega_m^{0.5}$	0.4789	$0.477 \pm 0.015$	$100\theta_D$	0.15994	$0.16022^{+0.00069}_{-0.00078}$
$\ln(10^{10} A_s)$	3.0401	$3.044 \pm 0.042$	$\sigma_8 \Omega_m^{0.25}$	0.6212	$0.621 \pm 0.013$	$z_{\text{eq}}$	3522	$3504 \pm 82$
$n_s$	0.9376	$0.941 \pm 0.017$	$\sigma_8/h^{0.5}$	1.0187	$1.017 \pm 0.019$	$k_{\text{eq}}$	0.010387	$0.01041 \pm 0.00016$
$y_{\text{cal}}$	1.00023	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.551	$2.542 \pm 0.054$	$100\theta_{\text{eq}}$	0.7906	$0.794 \pm 0.015$
$A_{217}^{\text{CIB}}$	62.5	$62.9 \pm 6.8$	$z_{\text{re}}$	8.16	$8.1^{+2.0}_{-1.8}$	$100\theta_{\text{s,eq}}$	0.4380	$0.4398 \pm 0.0075$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$10^9 A_s$	2.091	$2.102^{+0.081}_{-0.097}$	$r_{\text{drag}}/D_V(0.57)$	0.06959	$0.0699^{+0.0011}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	6.98	$5.3 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8589	$1.864 \pm 0.024$	$H(0.57)$	88.79	$89.6^{+2.3}_{-2.8}$
$A_{100}^{\text{PS}}$	244.9	$255 \pm 30$	$D_{40}$	1276.3	$1273 \pm 27$	$D_A(0.57)$	1476	$1462 \pm 53$
$A_{143}^{\text{PS}}$	41.6	$42 \pm 8$	$D_{220}$	5717.7	$5720 \pm 41$	$F_{\text{AP}}(0.57)$	0.6863	$0.6851 \pm 0.0060$
$A_{143 \times 217}^{\text{PS}}$	42.7	$38 \pm 10$	$D_{810}$	2531.1	$2531 \pm 14$	$f\sigma_8(0.57)$	0.4779	$0.479 \pm 0.010$
$A_{217}^{\text{PS}}$	102.2	$97 \pm 10$	$D_{1420}$	815.9	$814.3 \pm 5.2$	$\sigma_8(0.57)$	0.5901	$0.594^{+0.017}_{-0.020}$
$A^{\text{kSZ}}$	0.00	$< 4.20$	$D_{2000}$	232.23	$231.2 \pm 2.3$	$f_{2000}^{143}$	27.26	$29 \pm 3$
$A_{100}^{\text{dustTT}}$	7.24	$7.2 \pm 1.9$	$n_{\text{s},0.002}$	0.9376	$0.941 \pm 0.017$	$f_{2000}^{143 \times 217}$	30.52	$31.4 \pm 2.6$
$A_{143}^{\text{dustTT}}$	8.96	$8.9 \pm 1.9$	$Y_{\text{P}}$	0.23811	$0.2396 \pm 0.0047$	$f_{2000}^{217}$	104.15	$105.1 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.94	$17.0 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.23941	$0.2409 \pm 0.0047$	$\chi_{\text{lowEB}}^2$	5430.94	$5431.9 \pm 1.6$
$A_{217}^{\text{dustTT}}$	82.8	$81.9 \pm 7.4$	$10^5 D/H$	2.543	$2.569^{+0.069}_{-0.077}$	$\chi_{\text{plik}}^2$	762.3	$777.0 \pm 5.5$
$c_{100}$	0.99797	$0.99792 \pm 0.00077$	Age/Gyr	14.382	$14.27 \pm 0.37$	$\chi_{\text{prior}}^2$	1.67	$7.2 \pm 3.5$
$c_{217}$	0.99569	$0.9958 \pm 0.0015$	$z_*$	1089.912	$1090.05 \pm 0.49$	$\chi_{\text{CMB}}^2$	6193.3	$6208.9 \pm 5.7$
$H_0$	62.57	$63.4^{+2.6}_{-3.1}$	$r_*$	148.63	$147.8 \pm 2.9$			
$\Omega_\Lambda$	0.6468	$0.651 \pm 0.025$	$100\theta_*$	1.04182	$1.04163 \pm 0.00077$			

Best-fit  $\chi_{\text{eff}}^2 = 6194.93$ ;  $\Delta\chi_{\text{eff}}^2 = -2.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 6216.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.05$ ;  $R - 1 = 0.01012$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.94 ( $\Delta$  -0.61) plik\_dx11dr2\_HM\_v18\_TT: 762.32 ( $\Delta$  -1.35)

### 11.16 base\_nnu\_plikHM\_TTTEEE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.021959	$0.02199 \pm 0.00025$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.305 \pm 0.085$	Age/Gyr	14.127	$14.07 \pm 0.23$
$\Omega_c h^2$	0.11671	$0.1176 \pm 0.0031$	$A_{143}^{\text{dust}TE}$	0.156	$0.157 \pm 0.054$	$z_*$	1089.863	$1089.95 \pm 0.36$
$100\theta_{\text{MC}}$	1.041135	$1.04104 \pm 0.00045$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.341 \pm 0.081$	$r_*$	147.09	$146.6 \pm 2.0$
$\tau$	0.0671	$0.068 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.666	$1.68 \pm 0.26$	$100\theta_*$	1.04155	$1.04141 \pm 0.00057$
$N_{\text{eff}}$	2.759	$2.82 \pm 0.21$	$c_{100}$	0.99828	$0.99821 \pm 0.00078$	$D_A/\text{Gpc}$	14.122	$14.07 \pm 0.18$
$\ln(10^{10} A_s)$	3.0611	$3.065 \pm 0.036$	$c_{217}$	0.99578	$0.9959 \pm 0.0014$	$z_{\text{drag}}$	1058.52	$1058.69 \pm 0.89$
$n_s$	0.9500	$0.952 \pm 0.010$	$H_0$	64.89	$65.3 \pm 1.6$	$r_{\text{drag}}$	149.93	$149.4 \pm 2.1$
$y_{\text{cal}}$	1.00025	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6691	$0.671 \pm 0.013$	$k_D$	0.13873	$0.1391 \pm 0.0015$
$A_{217}^{\text{CIB}}$	63.4	$63.4 \pm 6.6$	$\Omega_m$	0.3309	$0.329 \pm 0.013$	$100\theta_D$	0.160355	$0.16050 \pm 0.00044$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$\Omega_m h^2$	0.13932	$0.1402 \pm 0.0032$	$z_{\text{eq}}$	3446.9	$3440 \pm 43$
$A_{143}^{\text{tSZ}}$	6.95	$5.3^{+2.1}_{-1.9}$	$\Omega_m h^3$	0.09040	$0.0916 \pm 0.0040$	$k_{\text{eq}}$	0.010315	$0.01034 \pm 0.00012$
$A_{100}^{\text{PS}}$	251.5	$260 \pm 28$	$\sigma_8$	0.8131	$0.816 \pm 0.017$	$100\theta_{\text{eq}}$	0.8042	$0.8055 \pm 0.0080$
$A_{143}^{\text{PS}}$	43.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4678	$0.4680 \pm 0.0099$	$100\theta_{s,\text{eq}}$	0.44495	$0.4456 \pm 0.0040$
$A_{143 \times 217}^{\text{PS}}$	44.2	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6167	$0.618 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07062	$0.07071 \pm 0.00061$
$A_{217}^{\text{PS}}$	102.6	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0095	$1.010 \pm 0.016$	$H(0.57)$	90.61	$91.0 \pm 1.6$
$A^{\text{kSZ}}$	0.00	$< 4.04$	$\langle d^2 \rangle^{1/2}$	2.5184	$2.518 \pm 0.040$	$D_A(0.57)$	1434.9	$1428 \pm 30$
$A_{100}^{\text{dust}TT}$	7.27	$7.3 \pm 1.9$	$z_{\text{re}}$	8.94	$9.0 \pm 1.6$	$F_{\text{AP}}(0.57)$	0.68088	$0.6804 \pm 0.0031$
$A_{143}^{\text{dust}TT}$	8.80	$8.8 \pm 1.8$	$10^9 A_s$	2.135	$2.144 \pm 0.077$	$f\sigma_8(0.57)$	0.4775	$0.4786 \pm 0.0090$
$A_{143 \times 217}^{\text{dust}TT}$	17.68	$16.9 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8672	$1.870 \pm 0.018$	$\sigma_8(0.57)$	0.6004	$0.603 \pm 0.014$
$A_{217}^{\text{dust}TT}$	82.2	$81.7 \pm 7.4$	$D_{40}$	1259.7	$1259 \pm 18$	$f_{2000}^{143}$	28.05	$29.1 \pm 2.9$
$A_{100}^{\text{dust}EE}$	0.0799	$0.0801 \pm 0.0057$	$D_{220}$	5734.9	$5736 \pm 39$	$f_{2000}^{143 \times 217}$	31.27	$31.8 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0474	$0.0476 \pm 0.0051$	$D_{810}$	2534.1	$2533 \pm 14$	$f_{2000}^{217}$	104.80	$105.5 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.100 \pm 0.033$	$D_{1420}$	815.77	$814.5 \pm 4.8$	$\chi_{\text{lowEB}}^2$	5431.43	$5432.3 \pm 1.8$
$A_{143}^{\text{dust}EE}$	0.0986	$0.0989 \pm 0.0070$	$D_{2000}$	231.48	$230.8 \pm 1.8$	$\chi_{\text{plik}}^2$	2431.5	$2451.2 \pm 6.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2257	$0.225 \pm 0.047$	$n_{s,0.002}$	0.9500	$0.952 \pm 0.010$	$\chi_{\text{prior}}^2$	6.1	$18.8 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.652	$0.66 \pm 0.13$	$Y_P$	0.24121	$0.2420 \pm 0.0030$	$\chi_{\text{CMB}}^2$	7862.9	$7883.5 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1408	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24252	$0.2434 \pm 0.0030$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1315	$0.131 \pm 0.029$	$10^5 D/H$	2.5676	$2.582 \pm 0.047$			

Best-fit  $\chi_{\text{eff}}^2 = 7869.05$ ;  $\Delta\chi_{\text{eff}}^2 = -1.78$ ;  $\bar{\chi}_{\text{eff}}^2 = 7902.25$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.66$ ;  $R - 1 = 0.01108$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5431.43 ( $\Delta$  -0.47) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.50 ( $\Delta$  -0.78)



### 11.17 base\_nnu\_plikHM\_TT\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.021842	$0.02191 \pm 0.00038$	$\Omega_\Lambda$	0.6575	$0.661^{+0.026}_{-0.023}$	$r_*$	147.89	$147.1 \pm 3.0$
$\Omega_c h^2$	0.11631	$0.1173 \pm 0.0042$	$\Omega_m$	0.3425	$0.339^{+0.023}_{-0.026}$	$100\theta_*$	1.04172	$1.04158 \pm 0.00077$
$100\theta_{MC}$	1.04122	$1.04114 \pm 0.00060$	$\Omega_m h^2$	0.13879	$0.1399^{+0.0042}_{-0.0047}$	$D_A/\text{Gpc}$	14.196	$14.13 \pm 0.28$
$\tau$	0.0774	$0.077 \pm 0.019$	$\Omega_m h^3$	0.0884	$0.0902^{+0.0059}_{-0.0069}$	$z_{\text{drag}}$	1058.10	$1058.4 \pm 1.3$
$N_{\text{eff}}$	2.647	$2.74^{+0.31}_{-0.35}$	$\sigma_8$	0.8213	$0.823 \pm 0.021$	$r_{\text{drag}}$	150.77	$150.0 \pm 3.1$
$\ln(10^{10} A_s)$	3.0789	$3.080 \pm 0.042$	$\sigma_8 \Omega_m^{0.5}$	0.4806	$0.479 \pm 0.014$	$k_D$	0.13822	$0.1388 \pm 0.0021$
$n_s$	0.9442	$0.947 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6283	$0.628 \pm 0.013$	$100\theta_D$	0.16011	$0.16032 \pm 0.00074$
$A_{217}^{\text{CIB}}$	62.8	$62.7 \pm 6.8$	$\sigma_8/h^{0.5}$	1.0293	$1.026 \pm 0.019$	$z_{\text{eq}}$	3488	$3473 \pm 80$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.39	—	$\langle d^2 \rangle^{1/2}$	2.571	$2.560 \pm 0.054$	$k_{\text{eq}}$	0.010357	$0.01037 \pm 0.00016$
$A_{143}^{\text{tSZ}}$	7.04	$5.3 \pm 1.9$	$z_{\text{re}}$	9.92	$9.8^{+1.9}_{-1.7}$	$100\theta_{\text{eq}}$	0.7968	$0.800 \pm 0.015$
$A_{100}^{\text{PS}}$	245.8	$254 \pm 30$	$10^9 A_s$	2.173	$2.178^{+0.089}_{-0.099}$	$100\theta_{\text{s,eq}}$	0.4412	$0.4427 \pm 0.0074$
$A_{143}^{\text{PS}}$	41.0	$42 \pm 8$	$10^9 A_s e^{-2\tau}$	1.8617	$1.866 \pm 0.025$	$r_{\text{drag}}/D_V(0.57)$	0.07007	$0.0703 \pm 0.0011$
$A_{143 \times 217}^{\text{PS}}$	41.7	$39 \pm 10$	$D_{40}$	1271.7	$1269 \pm 26$	$H(0.57)$	89.65	$90.4^{+2.5}_{-2.7}$
$A_{217}^{\text{PS}}$	101.7	$98 \pm 10$	$D_{220}$	5719.5	$5723 \pm 41$	$D_A(0.57)$	1456	$1444 \pm 52$
$A^{\text{kSZ}}$	0.00	$< 4.14$	$D_{810}$	2530.1	$2530 \pm 14$	$F_{\text{AP}}(0.57)$	0.6837	$0.6827 \pm 0.0058$
$A_{100}^{\text{dustTT}}$	7.23	$7.2 \pm 1.9$	$D_{1420}$	815.2	$814.2 \pm 5.2$	$f\sigma_8(0.57)$	0.4848	$0.485 \pm 0.010$
$A_{143}^{\text{dustTT}}$	8.88	$8.9 \pm 1.8$	$D_{2000}$	232.12	$231.4 \pm 2.3$	$\sigma_8(0.57)$	0.6038	$0.606 \pm 0.019$
$A_{143 \times 217}^{\text{dustTT}}$	17.81	$16.9 \pm 4.2$	$n_{\text{s},0.002}$	0.9442	$0.947 \pm 0.017$	$f_{2000}^{143}$	27.19	$29 \pm 4$
$A_{217}^{\text{dustTT}}$	82.6	$81.8 \pm 7.4$	$Y_{\text{P}}$	0.23957	$0.2408 \pm 0.0048$	$f_{2000}^{143 \times 217}$	30.45	$31.2 \pm 2.6$
$c_{100}$	0.99802	$0.99791 \pm 0.00078$	$Y_{\text{P}}^{\text{BBN}}$	0.24088	$0.2421 \pm 0.0048$	$f_{2000}^{217}$	104.12	$105.0 \pm 2.4$
$c_{217}$	0.99570	$0.9958 \pm 0.0015$	$10^5 \text{D}/\text{H}$	2.550	$2.570 \pm 0.073$	$\chi_{\text{plik}}^2$	761.6	$776.3 \pm 5.5$
$y_{\text{cal}}$	1.00014	$1.0003 \pm 0.0025$	$\text{Age}/\text{Gyr}$	14.259	$14.17 \pm 0.37$	$\chi_{\text{prior}}^2$	1.75	$8.2 \pm 3.8$
$H_0$	63.66	$64.4 \pm 2.9$	$z_*$	1089.86	$1089.96 \pm 0.50$			

Best-fit  $\chi_{\text{eff}}^2 = 763.38$ ;  $\Delta\chi_{\text{eff}}^2 = -1.53$ ;  $\bar{\chi}_{\text{eff}}^2 = 784.49$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.49$ ;  $R - 1 = 0.00828$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TT: 761.63 ( $\Delta$  -0.73)

### 11.18 base\_nnu\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022040	$0.02206 \pm 0.00024$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.304 \pm 0.085$	$Y_P^{\text{BBN}}$	0.24308	$0.2438 \pm 0.0029$
$\Omega_c h^2$	0.11679	$0.1175 \pm 0.0031$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.053$	$10^5 D/H$	2.5654	$2.580 \pm 0.047$
$100\theta_{\text{MC}}$	1.041130	$1.04104 \pm 0.00045$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.339 \pm 0.079$	Age/Gyr	14.079	$14.03 \pm 0.22$
$\tau$	0.0834	$0.082 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.673	$1.67 \pm 0.26$	$z_*$	1089.804	$1089.89 \pm 0.36$
$N_{\text{eff}}$	2.796	$2.85 \pm 0.20$	$c_{100}$	0.99830	$0.99823 \pm 0.00078$	$r_*$	146.81	$146.4 \pm 1.9$
$\ln(10^{10} A_s)$	3.0942	$3.093 \pm 0.036$	$c_{217}$	0.99577	$0.9959 \pm 0.0015$	$100\theta_*$	1.04151	$1.04139 \pm 0.00057$
$n_s$	0.9532	$0.9542 \pm 0.0099$	$y_{\text{cal}}$	1.00014	$1.0002 \pm 0.0025$	$D_A/\text{Gpc}$	14.096	$14.05 \pm 0.18$
$A_{217}^{\text{CIB}}$	62.3	$63.0 \pm 6.7$	$H_0$	65.36	$65.7 \pm 1.6$	$z_{\text{drag}}$	1058.71	$1058.88 \pm 0.86$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.50	—	$\Omega_\Lambda$	0.6735	$0.675 \pm 0.012$	$r_{\text{drag}}$	149.62	$149.2 \pm 2.0$
$A_{143}^{\text{tSZ}}$	6.84	$5.4 \pm 1.9$	$\Omega_m$	0.3265	$0.325 \pm 0.012$	$k_D$	0.13896	$0.1393 \pm 0.0015$
$A_{100}^{\text{PS}}$	250.5	$258 \pm 28$	$\Omega_m h^2$	0.13947	$0.1402 \pm 0.0032$	$100\theta_D$	0.160383	$0.16052 \pm 0.00043$
$A_{143}^{\text{PS}}$	44.0	$42 \pm 8$	$\Omega_m h^3$	0.09116	$0.0922 \pm 0.0040$	$z_{\text{eq}}$	3432.9	$3428 \pm 41$
$A_{143 \times 217}^{\text{PS}}$	45.9	$40 \pm 10$	$\sigma_8$	0.8264	$0.827 \pm 0.017$	$k_{\text{eq}}$	0.010300	$0.01032 \pm 0.00012$
$A_{217}^{\text{PS}}$	103.8	$98 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4722	$0.4715 \pm 0.0099$	$100\theta_{\text{eq}}$	0.8069	$0.8080 \pm 0.0078$
$A^{\text{kSZ}}$	0.00	$< 3.83$	$\sigma_8 \Omega_m^{0.25}$	0.6247	$0.624 \pm 0.012$	$100\theta_{s,\text{eq}}$	0.44630	$0.4468 \pm 0.0039$
$A_{100}^{\text{dust}TT}$	7.13	$7.3 \pm 1.9$	$\sigma_8/h^{0.5}$	1.0222	$1.020 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.07083	$0.07090 \pm 0.00060$
$A_{143}^{\text{dust}TT}$	8.80	$8.8 \pm 1.8$	$\langle d^2 \rangle^{1/2}$	2.5469	$2.542 \pm 0.041$	$H(0.57)$	90.98	$91.3 \pm 1.5$
$A_{143 \times 217}^{\text{dust}TT}$	17.80	$16.7 \pm 4.2$	$z_{\text{re}}$	10.43	$10.3_{-1.4}^{+1.7}$	$D_A(0.57)$	1426.8	$1421 \pm 29$
$A_{217}^{\text{dust}TT}$	82.6	$81.5 \pm 7.4$	$10^9 A_s$	2.207	$2.205 \pm 0.079$	$F_{\text{AP}}(0.57)$	0.67979	$0.6795 \pm 0.0030$
$A_{100}^{\text{dust}EE}$	0.0804	$0.0803 \pm 0.0057$	$10^9 A_s e^{-2\tau}$	1.8678	$1.871 \pm 0.018$	$f\sigma_8(0.57)$	0.4842	$0.4841 \pm 0.0090$
$A_{100 \times 143}^{\text{dust}EE}$	0.0478	$0.0478 \pm 0.0050$	$D_{40}$	1260.8	$1260 \pm 17$	$\sigma_8(0.57)$	0.6112	$0.612 \pm 0.014$
$A_{100 \times 217}^{\text{dust}EE}$	0.0997	$0.100 \pm 0.032$	$D_{220}$	5735.2	$5737 \pm 38$	$f_{2000}^{143}$	27.54	$28.7 \pm 2.9$
$A_{143}^{\text{dust}EE}$	0.0992	$0.0991 \pm 0.0069$	$D_{810}$	2533.1	$2532 \pm 14$	$f_{2000}^{143 \times 217}$	30.87	$31.5 \pm 2.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2267	$0.225 \pm 0.047$	$D_{1420}$	815.52	$814.3 \pm 4.7$	$f_{2000}^{217}$	104.47	$105.2 \pm 2.0$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$D_{2000}$	231.69	$231.0 \pm 1.8$	$\chi_{\text{plik}}^2$	2430.2	$2450.0 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	$n_{s,0.002}$	0.9532	$0.9542 \pm 0.0099$	$\chi_{\text{prior}}^2$	6.5	$19.9 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$Y_P$	0.24177	$0.2425 \pm 0.0029$			

Best-fit  $\chi_{\text{eff}}^2 = 2436.74$ ;  $\Delta\chi_{\text{eff}}^2 = -1.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 2469.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.38$ ;  $R - 1 = 0.00709$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.21 ( $\Delta$  -0.38)

### 11.19 base\_nnu\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022318	$0.02233 \pm 0.00024$	$\Omega_m h^2$	0.14303	$0.1437 \pm 0.0040$	$r_{\text{drag}}$	146.80	$146.5 \pm 2.3$
$\Omega_c h^2$	0.12007	$0.1207 \pm 0.0039$	$\Omega_m h^3$	0.09731	$0.0981 \pm 0.0046$	$k_D$	0.14088	$0.1411 \pm 0.0017$
$100\theta_{\text{MC}}$	1.04087	$1.04079 \pm 0.00055$	$\sigma_8$	0.8342	$0.835 \pm 0.020$	$100\theta_D$	0.16107	$0.16117 \pm 0.00057$
$\tau$	0.0827	$0.082 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4637	$0.464 \pm 0.011$	$z_{\text{eq}}$	3372.7	$3370 \pm 33$
$N_{\text{eff}}$	3.112	$3.15 \pm 0.23$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.622 \pm 0.014$	$k_{\text{eq}}$	0.010339	$0.01036 \pm 0.00015$
$\ln(10^{10} A_s)$	3.1006	$3.100 \pm 0.038$	$\sigma_8/h^{0.5}$	1.0114	$1.011 \pm 0.019$	$100\theta_{\text{eq}}$	0.8185	$0.8190 \pm 0.0062$
$n_s$	0.9697	$0.9707 \pm 0.0089$	$\langle d^2 \rangle^{1/2}$	2.4947	$2.491 \pm 0.043$	$100\theta_{s,\text{eq}}$	0.45212	$0.4524 \pm 0.0031$
$y_{\text{cal}}$	1.00045	$1.0003 \pm 0.0025$	$z_{\text{re}}$	10.40	$10.3^{+1.8}_{-1.5}$	$r_{\text{drag}}/D_V(0.57)$	0.071707	$0.07174 \pm 0.00047$
$A_{217}^{\text{CIB}}$	67.1	$64.3 \pm 6.8$	$10^9 A_s$	2.221	$2.221 \pm 0.085$	$H(0.57)$	93.47	$93.7 \pm 1.6$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8828	$1.884 \pm 0.021$	$D_A(0.57)$	1379.8	$1376 \pm 27$
$A_{143}^{\text{tSZ}}$	7.17	$5.0 \pm 2.0$	$D_{40}$	1231.9	$1231 \pm 15$	$F_{\text{AP}}(0.57)$	0.67540	$0.6752 \pm 0.0022$
$A_{100}^{\text{PS}}$	253.8	$260 \pm 28$	$D_{220}$	5720.1	$5718 \pm 40$	$f\sigma_8(0.57)$	0.4844	$0.485 \pm 0.011$
$A_{143}^{\text{PS}}$	38.9	$45 \pm 8$	$D_{810}$	2535.4	$2535 \pm 14$	$\sigma_8(0.57)$	0.6212	$0.622 \pm 0.015$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39 \pm 10$	$D_{1420}$	814.8	$814.0 \pm 5.2$	$f_{2000}^{143}$	29.77	$30.5 \pm 3.3$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$D_{2000}$	230.31	$229.9 \pm 2.2$	$f_{2000}^{143 \times 217}$	32.42	$32.9 \pm 2.5$
$A^{\text{kSZ}}$	0.00	$< 4.80$	$n_{s,0.002}$	0.9697	$0.9707 \pm 0.0089$	$f_{2000}^{217}$	106.15	$106.4 \pm 2.3$
$A_{100}^{\text{dustTT}}$	7.36	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24626	$0.2468 \pm 0.0032$	$\chi_{\text{lowTEB}}^2$	10496.29	$10496.9 \pm 2.5$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24759	$0.2481 \pm 0.0032$	$\chi_{\text{plik}}^2$	763.6	$777.8 \pm 5.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.2 \pm 4.2$	$10^5 D/H$	2.624	$2.636 \pm 0.066$	$\chi_{6\text{DF}}^2$	0.0156	$0.062 \pm 0.086$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.4$	Age/Gyr	13.736	$13.70 \pm 0.23$	$\chi_{\text{MGS}}^2$	1.34	$1.47 \pm 0.63$
$c_{100}$	0.99791	$0.99789 \pm 0.00078$	$z_*$	1090.056	$1090.14 \pm 0.48$	$\chi_{\text{DR11CMass}}^2$	2.430	$2.97 \pm 0.79$
$c_{217}$	0.99594	$0.9960 \pm 0.0015$	$r_*$	144.12	$143.8 \pm 2.2$	$\chi_{\text{DR11LOWZ}}^2$	0.547	$0.68 \pm 0.63$
$H_0$	68.03	$68.3 \pm 1.5$	$100\theta_*$	1.04101	$1.04091 \pm 0.00067$	$\chi_{\text{prior}}^2$	2.07	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6910	$0.6915 \pm 0.0088$	$D_A/\text{Gpc}$	13.845	$13.82 \pm 0.20$	$\chi_{\text{CMB}}^2$	11259.9	$11274.7 \pm 5.5$
$\Omega_m$	0.3090	$0.3085 \pm 0.0088$	$z_{\text{drag}}$	1059.86	$1059.97 \pm 0.88$	$\chi_{\text{BAO}}^2$	4.33	$5.2 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 11266.34$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.24$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.01093$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.43 ( $\Delta$  -0.02) DR11LOWZ: 0.55 ( $\Delta$  -0.07) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30  
( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18\_TT: 763.64 ( $\Delta$  0.04)

## 11.20 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022365	$0.02238 \pm 0.00023$	$\Omega_m h^3$	0.09837	$0.0994^{+0.0042}_{-0.0046}$	$100\theta_D$	0.16118	$0.16130 \pm 0.00054$
$\Omega_c h^2$	0.12062	$0.1215 \pm 0.0037$	$\sigma_8$	0.8369	$0.839 \pm 0.019$	$z_{\text{eq}}$	3362.5	$3362 \pm 31$
$100\theta_{\text{MC}}$	1.04079	$1.04071 \pm 0.00054$	$\sigma_8 \Omega_m^{0.5}$	0.4631	$0.464 \pm 0.011$	$k_{\text{eq}}$	0.010345	$0.01038 \pm 0.00014$
$\tau$	0.0843	$0.083 \pm 0.018$	$\sigma_8 \Omega_m^{0.25}$	0.6225	$0.624 \pm 0.014$	$100\theta_{\text{eq}}$	0.8204	$0.8206 \pm 0.0058$
$N_{\text{eff}}$	3.166	$3.22 \pm 0.21$	$\sigma_8/h^{0.5}$	1.0112	$1.012 \pm 0.019$	$100\theta_{\text{s,eq}}$	0.45311	$0.4532 \pm 0.0030$
$\ln(10^{10} A_s)$	3.1051	$3.105 \pm 0.038$	$\langle d^2 \rangle^{1/2}$	2.4906	$2.490 \pm 0.043$	$r_{\text{drag}}/D_V(0.57)$	0.071854	$0.07186 \pm 0.00044$
$n_s$	0.9723	$0.9733 \pm 0.0081$	$z_{\text{re}}$	10.55	$10.4^{+1.8}_{-1.5}$	$H(0.57)$	93.89	$94.2 \pm 1.5$
$y_{\text{cal}}$	1.00030	$1.0003 \pm 0.0025$	$10^9 A_s$	2.231	$2.233 \pm 0.084$	$D_A(0.57)$	1372.2	$1368 \pm 24$
$A_{217}^{\text{CIB}}$	67.2	$64.6 \pm 6.8$	$10^9 A_s e^{-2\tau}$	1.8850	$1.888 \pm 0.020$	$F_{\text{AP}}(0.57)$	0.67468	$0.6746 \pm 0.0021$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$D_{40}$	1228.0	$1228 \pm 15$	$f\sigma_8(0.57)$	0.4852	$0.486 \pm 0.011$
$A_{143}^{\text{tSZ}}$	7.11	$5.0 \pm 2.0$	$D_{220}$	5717.5	$5718 \pm 41$	$\sigma_8(0.57)$	0.6239	$0.625 \pm 0.015$
$A_{100}^{\text{PS}}$	255.1	$261 \pm 28$	$D_{810}$	2535.2	$2535 \pm 14$	$f_{2000}^{143}$	30.12	$30.9 \pm 3.3$
$A_{143}^{\text{PS}}$	40.1	$45 \pm 8$	$D_{1420}$	814.5	$813.8 \pm 5.3$	$f_{2000}^{143 \times 217}$	32.69	$33.2 \pm 2.4$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39^{+10}_{-10}$	$D_{2000}$	230.02	$229.6 \pm 2.2$	$f_{2000}^{217}$	106.30	$106.7 \pm 2.3$
$A_{217}^{\text{PS}}$	98.1	$97 \pm 10$	$n_{\text{s},0.002}$	0.9723	$0.9733 \pm 0.0081$	$\chi_{\text{lowTEB}}^2$	10496.03	$10496.7 \pm 2.5$
$A^{\text{kSZ}}$	0.01	$< 5.00$	$Y_{\text{P}}$	0.24701	$0.2476 \pm 0.0029$	$\chi_{\text{plik}}^2$	764.1	$778.2 \pm 5.8$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24835	$0.2490 \pm 0.0029$	$\chi_{\text{H070p6}}^2$	0.403	$0.48 \pm 0.51$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.634	$2.648 \pm 0.064$	$\chi_{\text{JLA}}^2$	706.617	$706.67 \pm 0.18$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.2 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.680	$13.64 \pm 0.20$	$\chi_{6\text{DF}}^2$	0.0029	$0.046 \pm 0.066$
$A_{217}^{\text{dustTT}}$	81.7	$81.8 \pm 7.3$	$z_*$	1090.100	$1090.20 \pm 0.47$	$\chi_{\text{MGS}}^2$	1.54	$1.63 \pm 0.61$
$c_{100}$	0.99792	$0.99788 \pm 0.00077$	$r_*$	143.68	$143.2 \pm 2.0$	$\chi_{\text{DR11CMass}}^2$	2.426	$2.91 \pm 0.70$
$c_{217}$	0.99592	$0.9960 \pm 0.0015$	$100\theta_*$	1.04090	$1.04078 \pm 0.00064$	$\chi_{\text{DR11LOWZ}}^2$	0.373	$0.51 \pm 0.51$
$H_0$	68.49	$68.7 \pm 1.4$	$D_A/\text{Gpc}$	13.803	$13.76 \pm 0.19$	$\chi_{\text{prior}}^2$	1.99	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6938	$0.6940 \pm 0.0081$	$z_{\text{drag}}$	1060.05	$1060.20 \pm 0.81$	$\chi_{\text{CMB}}^2$	11260.1	$11274.8 \pm 5.5$
$\Omega_m$	0.3062	$0.3060 \pm 0.0081$	$r_{\text{drag}}$	146.34	$145.9 \pm 2.1$	$\chi_{\text{BAO}}^2$	4.34	$5.1 \pm 1.1$
$\Omega_m h^2$	0.14363	$0.1445 \pm 0.0038$	$k_D$	0.14120	$0.1415 \pm 0.0016$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 11994.45$ ;  $R - 1 = 0.01034$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.43 DR11LOWZ: 0.37 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.03 plik\_dx11dr2\_HM\_v18\_TT: 764.08  
Hubble - H070p6: 0.40 SN - JLA December\_2013: 706.62

## 11.21 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022321	$0.02232 \pm 0.00022$	$\Omega_m h^3$	0.09730	$0.0980^{+0.0039}_{-0.0044}$	$100\theta_D$	0.16110	$0.16122 \pm 0.00054$
$\Omega_c h^2$	0.11952	$0.1200^{+0.0033}_{-0.0040}$	$\sigma_8$	0.8191	$0.820 \pm 0.013$	$z_{\text{eq}}$	3358.5	$3355 \pm 30$
$100\theta_{\text{MC}}$	1.04094	$1.04086 \pm 0.00054$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.4528 \pm 0.0070$	$k_{\text{eq}}$	0.010298	$0.01031^{+0.00013}_{-0.00015}$
$\tau$	0.0674	$0.067 \pm 0.013$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.6093 \pm 0.0087$	$100\theta_{\text{eq}}$	0.8211	$0.8217^{+0.0056}_{-0.0062}$
$N_{\text{eff}}$	3.115	$3.15 \pm 0.21$	$\sigma_8/h^{0.5}$	0.9912	$0.991 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45350	$0.4538 \pm 0.0029$
$\ln(10^{10} A_s)$	3.0678	$3.068 \pm 0.026$	$\langle d^2 \rangle^{1/2}$	2.4452	$2.445 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071909	$0.07194^{+0.00042}_{-0.00048}$
$n_s$	0.9710	$0.9712 \pm 0.0078$	$z_{\text{re}}$	8.98	$8.9^{+1.4}_{-1.2}$	$H(0.57)$	93.57	$93.8 \pm 1.4$
$y_{\text{cal}}$	1.00008	$1.0001 \pm 0.0025$	$10^9 A_s$	2.149	$2.151 \pm 0.055$	$D_A(0.57)$	1376.6	$1373 \pm 24$
$A_{217}^{\text{CIB}}$	67.6	$64.9 \pm 6.8$	$10^9 A_s e^{-2\tau}$	1.8783	$1.881 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.67451	$0.6744 \pm 0.0020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.9	$1222 \pm 14$	$f\sigma_8(0.57)$	0.4747	$0.4750 \pm 0.0068$
$A_{143}^{\text{tSZ}}$	7.22	$4.9 \pm 2.0$	$D_{220}$	5713.0	$5716 \pm 40$	$\sigma_8(0.57)$	0.6108	$0.612 \pm 0.011$
$A_{100}^{\text{PS}}$	253.9	$262 \pm 28$	$D_{810}$	2533.4	$2533 \pm 14$	$f_{2000}^{143}$	30.32	$31.3 \pm 3.3$
$A_{143}^{\text{PS}}$	39.9	$45^{+9}_{-8}$	$D_{1420}$	814.7	$813.8 \pm 5.3$	$f_{2000}^{143 \times 217}$	32.88	$33.4 \pm 2.4$
$A_{143 \times 217}^{\text{PS}}$	33.3	$39 \pm 10$	$D_{2000}$	229.91	$229.4 \pm 2.2$	$f_{2000}^{217}$	106.38	$106.9 \pm 2.3$
$A_{217}^{\text{PS}}$	97.5	$96^{+10}_{-10}$	$n_{\text{s},0.002}$	0.9710	$0.9712 \pm 0.0078$	$\chi_{\text{lensing}}^2$	9.31	$10.1 \pm 1.6$
$A^{\text{kSZ}}$	0.01	$< 5.30$	$Y_{\text{P}}$	0.24630	$0.2467 \pm 0.0028$	$\chi_{\text{lowTEB}}^2$	10494.51	$10495.0 \pm 1.3$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24763	$0.2481 \pm 0.0029$	$\chi_{\text{plik}}^2$	766.5	$780.0 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.13	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.624	$2.638^{+0.062}_{-0.070}$	$\chi_{\text{H070p6}}^2$	0.485	$0.57 \pm 0.55$
$A_{143 \times 217}^{\text{dustTT}}$	17.79	$17.4 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.729	$13.70 \pm 0.20$	$\chi_{\text{JLA}}^2$	706.604	$706.65 \pm 0.16$
$A_{217}^{\text{dustTT}}$	82.1	$81.9 \pm 7.5$	$z_*$	1090.007	$1090.09 \pm 0.47$	$\chi_{6\text{DF}}^2$	0.00095	$0.043 \pm 0.062$
$c_{100}$	0.99789	$0.99787 \pm 0.00076$	$r_*$	144.25	$144.0 \pm 2.0$	$\chi_{\text{MGS}}^2$	1.61	$1.73 \pm 0.62$
$c_{217}$	0.99599	$0.9961 \pm 0.0014$	$100\theta_*$	1.04108	$1.04099 \pm 0.00064$	$\chi_{\text{DR11CMass}}^2$	2.441	$2.93 \pm 0.74$
$H_0$	68.29	$68.5 \pm 1.3$	$D_A/\text{Gpc}$	13.856	$13.83 \pm 0.18$	$\chi_{\text{DR11LOWZ}}^2$	0.322	$0.43 \pm 0.45$
$\Omega_\Lambda$	0.6945	$0.6950 \pm 0.0080$	$z_{\text{drag}}$	1059.86	$1059.89 \pm 0.78$	$\chi_{\text{prior}}^2$	2.15	$7.4 \pm 3.6$
$\Omega_m$	0.3055	$0.3050 \pm 0.0080$	$r_{\text{drag}}$	146.93	$146.7 \pm 2.1$	$\chi_{\text{CMB}}^2$	11270.4	$11285.1 \pm 5.5$
$\Omega_m h^2$	0.14248	$0.1430^{+0.0033}_{-0.0041}$	$k_D$	0.14074	$0.1409^{+0.0014}_{-0.0016}$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.1$

Best-fit  $\chi_{\text{eff}}^2 = 11983.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.83$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.81$ ;  $R - 1 = 0.02766$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.03) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.51 ( $\Delta$  -0.41) plik\_dx11dr2\_HM\_v18\_TT: 766.54 ( $\Delta$  0.41) Hubble - H070p6: 0.48 ( $\Delta$  -0.18) SN - JLA December\_2013: 706.60 ( $\Delta$  -0.02)

## 11.22 base\_nnu\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022267	$0.02226 \pm 0.00023$	$\Omega_m h^3$	0.09580	$0.0967^{+0.0042}_{-0.0047}$	$100\theta_D$	0.16095	$0.16108 \pm 0.00057$
$\Omega_c h^2$	0.11840	$0.1192^{+0.0034}_{-0.0041}$	$\sigma_8$	0.8157	$0.817 \pm 0.014$	$z_{\text{eq}}$	3365.0	$3364 \pm 32$
$100\theta_{\text{MC}}$	1.04106	$1.04095 \pm 0.00055$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4528 \pm 0.0070$	$k_{\text{eq}}$	0.010265	$0.01029^{+0.00013}_{-0.00015}$
$\tau$	0.0671	$0.066 \pm 0.013$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.6080 \pm 0.0089$	$100\theta_{\text{eq}}$	0.8198	$0.8200^{+0.0059}_{-0.0065}$
$N_{\text{eff}}$	3.038	$3.08^{+0.22}_{-0.24}$	$\sigma_8/h^{0.5}$	0.9907	$0.990 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45287	$0.4530^{+0.0030}_{-0.0033}$
$\ln(10^{10} A_s)$	3.0644	$3.063 \pm 0.026$	$\langle d^2 \rangle^{1/2}$	2.4494	$2.447 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071816	$0.07181^{+0.00045}_{-0.00050}$
$n_s$	0.9680	$0.9685 \pm 0.0086$	$z_{\text{re}}$	8.93	$8.8^{+1.4}_{-1.2}$	$H(0.57)$	93.02	$93.3 \pm 1.6$
$y_{\text{cal}}$	1.00016	$1.0001 \pm 0.0025$	$10^9 A_s$	2.142	$2.140 \pm 0.056$	$D_A(0.57)$	1385.6	$1382 \pm 26$
$A_{217}^{\text{CIB}}$	67.6	$64.7 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8732	$1.876 \pm 0.020$	$F_{\text{AP}}(0.57)$	0.67502	$0.6750 \pm 0.0022$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.0	$1225 \pm 15$	$f\sigma_8(0.57)$	0.4732	$0.4737 \pm 0.0071$
$A_{143}^{\text{tSZ}}$	7.26	$5.0 \pm 2.0$	$D_{220}$	5715.5	$5716 \pm 40$	$\sigma_8(0.57)$	0.6078	$0.608 \pm 0.011$
$A_{100}^{\text{PS}}$	253.3	$261 \pm 28$	$D_{810}$	2532.5	$2532 \pm 14$	$f_{2000}^{143}$	29.90	$30.9 \pm 3.3$
$A_{143}^{\text{PS}}$	38.8	$45^{+9}_{-8}$	$D_{1420}$	815.1	$814.1 \pm 5.2$	$f_{2000}^{143 \times 217}$	32.55	$33.1 \pm 2.4$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39 \pm 10$	$D_{2000}$	230.29	$229.7 \pm 2.2$	$f_{2000}^{217}$	106.09	$106.6 \pm 2.3$
$A_{217}^{\text{PS}}$	96.8	$96^{+10}_{-10}$	$n_{\text{s},0.002}$	0.9680	$0.9685 \pm 0.0086$	$\chi_{\text{lensing}}^2$	9.25	$10.0 \pm 1.6$
$A^{\text{kSZ}}$	0.01	$< 5.15$	$Y_{\text{P}}$	0.24524	$0.2458 \pm 0.0031$	$\chi_{\text{lowTEB}}^2$	10494.91	$10495.4 \pm 1.4$
$A_{100}^{\text{dustTT}}$	7.51	$7.4 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24657	$0.2471 \pm 0.0031$	$\chi_{\text{plik}}^2$	766.1	$779.8 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.13	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.608	$2.625^{+0.063}_{-0.071}$	$\chi_{6\text{DF}}^2$	0.0060	$0.055 \pm 0.076$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.3 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.805	$13.77 \pm 0.22$	$\chi_{\text{MGS}}^2$	1.47	$1.55 \pm 0.63$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.5$	$z_*$	1089.901	$1090.03 \pm 0.48$	$\chi_{\text{DR11CMass}}^2$	2.401	$2.93 \pm 0.76$
$c_{100}$	0.99790	$0.99788 \pm 0.00076$	$r_*$	144.96	$144.6 \pm 2.1$	$\chi_{\text{DR11LOWZ}}^2$	0.423	$0.59 \pm 0.57$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$100\theta_*$	1.04126	$1.04112 \pm 0.00067$	$\chi_{\text{prior}}^2$	2.18	$7.3 \pm 3.5$
$H_0$	67.79	$68.0 \pm 1.5$	$D_A/\text{Gpc}$	13.922	$13.89 \pm 0.20$	$\chi_{\text{CMB}}^2$	11270.3	$11285.2 \pm 5.5$
$\Omega_\Lambda$	0.6925	$0.6924 \pm 0.0086$	$z_{\text{drag}}$	1059.59	$1059.64 \pm 0.85$	$\chi_{\text{BAO}}^2$	4.30	$5.1 \pm 1.1$
$\Omega_m$	0.3075	$0.3076 \pm 0.0086$	$r_{\text{drag}}$	147.67	$147.3 \pm 2.2$			
$\Omega_m h^2$	0.14132	$0.1421^{+0.0035}_{-0.0042}$	$k_D$	0.14021	$0.1405 \pm 0.0016$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.73$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.94$ ;  $R - 1 = 0.02506$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  -0.00) DR11LOWZ: 0.42 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.25 ( $\Delta$  0.01) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.91 ( $\Delta$  0.05) plik\_dx11dr2\_HM\_v18\_TT: 766.09 ( $\Delta$  -0.11)

### 11.23 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022261	$0.02229 \pm 0.00020$	$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	$r_*$	145.17	$144.8 \pm 1.8$
$\Omega_c h^2$	0.11844	$0.1192 \pm 0.0030$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.336 \pm 0.081$	$100\theta_*$	1.04116	$1.04107 \pm 0.00053$
$100\theta_{\text{MC}}$	1.040934	$1.04087 \pm 0.00043$	$A_{217}^{\text{dust}TE}$	1.664	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.943	$13.91 \pm 0.16$
$\tau$	0.0832	$0.082 \pm 0.017$	$c_{100}$	0.99822	$0.99816 \pm 0.00077$	$z_{\text{drag}}$	1059.51	$1059.68 \pm 0.73$
$N_{\text{eff}}$	2.996	$3.04 \pm 0.18$	$c_{217}$	0.99584	$0.9959 \pm 0.0015$	$r_{\text{drag}}$	147.88	$147.5 \pm 1.8$
$\ln(10^{10} A_s)$	3.0977	$3.098 \pm 0.035$	$H_0$	67.23	$67.5 \pm 1.2$	$k_D$	0.14015	$0.1405 \pm 0.0014$
$n_s$	0.9651	$0.9658 \pm 0.0076$	$\Omega_\Lambda$	0.6873	$0.6880 \pm 0.0075$	$100\theta_D$	0.160769	$0.16086 \pm 0.00041$
$y_{\text{cal}}$	1.00011	$1.0005 \pm 0.0025$	$\Omega_m$	0.3127	$0.3120 \pm 0.0075$	$z_{\text{eq}}$	3385.0	$3383 \pm 27$
$A_{217}^{\text{CIB}}$	64.1	$63.6 \pm 6.7$	$\Omega_m h^2$	0.14135	$0.1421 \pm 0.0031$	$k_{\text{eq}}$	0.010297	$0.01032 \pm 0.00012$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$\Omega_m h^3$	0.09503	$0.0959 \pm 0.0036$	$100\theta_{\text{eq}}$	0.8160	$0.8165 \pm 0.0051$
$A_{143}^{\text{tSZ}}$	7.04	$5.4 \pm 1.9$	$\sigma_8$	0.8298	$0.831 \pm 0.017$	$100\theta_{s,\text{eq}}$	0.45090	$0.4511 \pm 0.0026$
$A_{100}^{\text{PS}}$	250.1	$259 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.4642 \pm 0.0092$	$r_{\text{drag}}/D_V(0.57)$	0.071518	$0.07155 \pm 0.00039$
$A_{143}^{\text{PS}}$	42.7	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.621 \pm 0.012$	$H(0.57)$	92.62	$92.9 \pm 1.3$
$A_{143 \times 217}^{\text{PS}}$	42.9	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0120	$1.012 \pm 0.017$	$D_A(0.57)$	1394.3	$1390 \pm 22$
$A_{217}^{\text{PS}}$	101.8	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5051	$2.504 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67633	$0.6761 \pm 0.0019$
$A^{\text{kSZ}}$	0.00	$< 4.03$	$z_{\text{re}}$	10.41	$10.3_{-1.4}^{+1.6}$	$f\sigma_8(0.57)$	0.4828	$0.4833 \pm 0.0094$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s$	2.215	$2.217 \pm 0.077$	$\sigma_8(0.57)$	0.6170	$0.618 \pm 0.014$
$A_{143}^{\text{dust}TT}$	8.96	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8753	$1.879 \pm 0.018$	$f_{2000}^{143}$	28.23	$29.2 \pm 2.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.77	$17.0 \pm 4.2$	$D_{40}$	1238.8	$1240 \pm 14$	$f_{2000}^{143 \times 217}$	31.51	$31.9 \pm 2.1$
$A_{217}^{\text{dust}TT}$	82.1	$81.6 \pm 7.5$	$D_{220}$	5725.4	$5731 \pm 39$	$f_{2000}^{217}$	105.03	$105.6 \pm 2.0$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0813 \pm 0.0056$	$D_{810}$	2534.1	$2535 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.26	$10497.8 \pm 2.4$
$A_{100 \times 143}^{\text{dust}EE}$	0.04893	$0.0490 \pm 0.0049$	$D_{1420}$	815.55	$815.1 \pm 4.9$	$\chi_{\text{plik}}^2$	2431.5	$2450.9 \pm 6.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.100 \pm 0.032$	$D_{2000}$	231.02	$230.7 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.0468	$0.075 \pm 0.090$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1004 \pm 0.0068$	$n_{s,0.002}$	0.9651	$0.9658 \pm 0.0076$	$\chi_{\text{MGS}}^2$	1.097	$1.21 \pm 0.49$
$A_{143 \times 217}^{\text{dust}EE}$	0.2229	$0.224 \pm 0.046$	$Y_P$	0.24466	$0.2452 \pm 0.0025$	$\chi_{\text{DR11CMass}}^2$	2.595	$2.94 \pm 0.73$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.24599	$0.2466 \pm 0.0025$	$\chi_{\text{DR11LOWZ}}^2$	0.82	$0.89 \pm 0.63$
$A_{100}^{\text{dust}TE}$	0.1405	$0.140 \pm 0.038$	$10^5 D/H$	2.5944	$2.604 \pm 0.046$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	Age/Gyr	13.854	$13.81 \pm 0.18$	$\chi_{\text{CMB}}^2$	12928.7	$12948.7 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.307	$0.303 \pm 0.084$	$z_*$	1089.870	$1089.94 \pm 0.35$	$\chi_{\text{BAO}}^2$	4.56	$5.1 \pm 1.1$

Best-fit  $\chi_{\text{eff}}^2 = 12940.09$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.12$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.64$ ;  $R - 1 = 0.00881$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.05 ( $\Delta$  0.02) MGS: 1.10 ( $\Delta$  -0.12) DR11CMass: 2.60 ( $\Delta$  0.10) DR11LOWZ: 0.82 ( $\Delta$  0.14) CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.26 ( $\Delta$  -0.16) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.46 ( $\Delta$  -0.07)

## 11.24 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022366	$0.02235 \pm 0.00019$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.337 \pm 0.081$	$D_A/\text{Gpc}$	13.852	$13.86 \pm 0.15$
$\Omega_c h^2$	0.11986	$0.1198 \pm 0.0029$	$A_{217}^{\text{dust}TE}$	1.668	$1.67 \pm 0.26$	$z_{\text{drag}}$	1059.97	$1059.91 \pm 0.69$
$100\theta_{\text{MC}}$	1.040778	$1.04080 \pm 0.00042$	$c_{100}$	0.99820	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	146.84	$146.9 \pm 1.7$
$\tau$	0.0863	$0.084 \pm 0.016$	$c_{217}$	0.99596	$0.9959 \pm 0.0015$	$k_D$	0.14090	$0.1408 \pm 0.0013$
$N_{\text{eff}}$	3.103	$3.10 \pm 0.17$	$H_0$	68.02	$67.9 \pm 1.1$	$100\theta_D$	0.160965	$0.16097 \pm 0.00039$
$\ln(10^{10} A_s)$	3.1079	$3.104^{+0.037}_{-0.034}$	$\Omega_\Lambda$	0.6912	$0.6905 \pm 0.0070$	$z_{\text{eq}}$	3372.7	$3375 \pm 25$
$n_s$	0.9693	$0.9684 \pm 0.0071$	$\Omega_m$	0.3088	$0.3095 \pm 0.0070$	$k_{\text{eq}}$	0.010334	$0.01033 \pm 0.00012$
$y_{\text{cal}}$	1.00038	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14287	$0.1428 \pm 0.0030$	$100\theta_{\text{eq}}$	0.81852	$0.8181 \pm 0.0048$
$A_{217}^{\text{CIB}}$	66.1	$63.8 \pm 6.7$	$\Omega_m h^3$	0.09718	$0.0971 \pm 0.0034$	$100\theta_{s,\text{eq}}$	0.45211	$0.4519 \pm 0.0024$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$\sigma_8$	0.8364	$0.835 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.071705	$0.07168 \pm 0.00037$
$A_{143}^{\text{tSZ}}$	7.18	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4648	$0.4644 \pm 0.0092$	$H(0.57)$	93.43	$93.4 \pm 1.2$
$A_{100}^{\text{PS}}$	254.6	$260 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6235	$0.623 \pm 0.012$	$D_A(0.57)$	1380.3	$1382 \pm 20$
$A_{143}^{\text{PS}}$	40.4	$43 \pm 8$	$\sigma_8/h^{0.5}$	1.0141	$1.013 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67534	$0.6755 \pm 0.0018$
$A_{143 \times 217}^{\text{PS}}$	37.1	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5039	$2.502 \pm 0.039$	$f\sigma_8(0.57)$	0.4856	$0.4848 \pm 0.0093$
$A_{217}^{\text{PS}}$	98.9	$98 \pm 10$	$z_{\text{re}}$	10.70	$10.5^{+1.6}_{-1.3}$	$\sigma_8(0.57)$	0.6228	$0.622 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 4.15$	$10^9 A_s$	2.237	$2.230 \pm 0.076$	$f_{2000}^{143}$	29.07	$29.5 \pm 2.9$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8827	$1.883 \pm 0.017$	$f_{2000}^{143 \times 217}$	32.05	$32.1 \pm 2.1$
$A_{143}^{\text{dust}TT}$	8.99	$9.0 \pm 1.8$	$D_{40}$	1235.2	$1237 \pm 14$	$f_{2000}^{217}$	105.64	$105.8 \pm 2.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.65	$17.0 \pm 4.1$	$D_{220}$	5729.2	$5731 \pm 39$	$\chi_{\text{lowTEB}}^2$	10496.97	$10497.6 \pm 2.4$
$A_{217}^{\text{dust}TT}$	82.1	$81.7 \pm 7.4$	$D_{810}$	2535.9	$2536 \pm 14$	$\chi_{\text{plik}}^2$	2432.2	$2451.4 \pm 6.9$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0814 \pm 0.0057$	$D_{1420}$	815.19	$815.0 \pm 4.8$	$\chi_{\text{H070p6}}^2$	0.602	$0.75 \pm 0.56$
$A_{100 \times 143}^{\text{dust}EE}$	0.04930	$0.0491 \pm 0.0049$	$D_{2000}$	230.59	$230.5 \pm 1.8$	$\chi_{\text{JLA}}^2$	706.676	$706.73 \pm 0.19$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.100 \pm 0.033$	$n_{s,0.002}$	0.9693	$0.9684 \pm 0.0071$	$\chi_{6\text{DF}}^2$	0.0153	$0.051 \pm 0.067$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1007 \pm 0.0068$	$Y_{\text{P}}$	0.24617	$0.2460 \pm 0.0024$	$\chi_{\text{MGS}}^2$	1.343	$1.37 \pm 0.48$
$A_{143 \times 217}^{\text{dust}EE}$	0.2246	$0.224 \pm 0.046$	$Y_{\text{P}}^{\text{BBN}}$	0.24750	$0.2474 \pm 0.0024$	$\chi_{\text{DR11CMass}}^2$	2.438	$2.79 \pm 0.54$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$10^5 D/H$	2.6120	$2.613 \pm 0.045$	$\chi_{\text{DR11LOWZ}}^2$	0.546	$0.69 \pm 0.52$
$A_{100}^{\text{dust}TE}$	0.1408	$0.140 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.742	$13.75 \pm 0.17$	$\chi_{\text{prior}}^2$	6.9	$19.4 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$z_*$	1089.969	$1089.98 \pm 0.35$	$\chi_{\text{CMB}}^2$	12929.2	$12949.0 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.304 \pm 0.084$	$r_*$	144.18	$144.3 \pm 1.7$	$\chi_{\text{BAO}}^2$	4.342	$4.91 \pm 0.79$
$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	$100\theta_*$	1.04093	$1.04096 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.70$ ;  $\bar{\chi}_{\text{eff}}^2 = 13680.72$ ;  $R - 1 = 0.01333$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.34 DR11CMass: 2.44 DR11LOWZ: 0.55 CMB - lowl\_SMW\_70\_dx11d\_2014.10.03\_v5c\_Ap: 10496.97 plik\_dx11dr2\_HM\_v18\_TTTEEE:



## 11.25 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022286	$0.02229 \pm 0.00018$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.334 \pm 0.080$	$D_A/\text{Gpc}$	13.937	$13.92 \pm 0.15$
$\Omega_c h^2$	0.11822	$0.1187 \pm 0.0028$	$A_{217}^{\text{dust}TE}$	1.663	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.59	$1059.64 \pm 0.68$
$100\theta_{\text{MC}}$	1.040944	$1.04095 \pm 0.00041$	$c_{100}$	0.99817	$0.99811 \pm 0.00077$	$r_{\text{drag}}$	147.81	$147.6 \pm 1.7$
$\tau$	0.0667	$0.066 \pm 0.012$	$c_{217}$	0.99606	$0.9960 \pm 0.0014$	$k_D$	0.14016	$0.1403 \pm 0.0013$
$N_{\text{eff}}$	3.016	$3.04 \pm 0.17$	$H_0$	67.57	$67.7 \pm 1.1$	$100\theta_D$	0.160821	$0.16089 \pm 0.00039$
$\ln(10^{10} A_s)$	3.0632	$3.063 \pm 0.024$	$\Omega_\Lambda$	0.6909	$0.6908 \pm 0.0069$	$z_{\text{eq}}$	3371.2	$3372 \pm 25$
$n_s$	0.9661	$0.9664 \pm 0.0071$	$\Omega_m$	0.3091	$0.3092 \pm 0.0069$	$k_{\text{eq}}$	0.010268	$0.01029 \pm 0.00011$
$y_{\text{cal}}$	0.99990	$1.0001 \pm 0.0026$	$\Omega_m h^2$	0.14115	$0.1416 \pm 0.0029$	$100\theta_{\text{eq}}$	0.81863	$0.8186 \pm 0.0048$
$A_{217}^{\text{CIB}}$	67.2	$64.4 \pm 6.8$	$\Omega_m h^3$	0.09537	$0.0959 \pm 0.0034$	$100\theta_{s,\text{eq}}$	0.45223	$0.4522 \pm 0.0024$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\sigma_8$	0.8145	$0.815 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.071713	$0.07171 \pm 0.00037$
$A_{143}^{\text{tSZ}}$	7.26	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4528	$0.4534 \pm 0.0062$	$H(0.57)$	92.84	$93.0 \pm 1.2$
$A_{100}^{\text{PS}}$	256.3	$260 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6073	$0.6080 \pm 0.0079$	$D_A(0.57)$	1389.3	$1387 \pm 21$
$A_{143}^{\text{PS}}$	38.9	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9908	$0.991 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67543	$0.6754 \pm 0.0018$
$A_{143 \times 217}^{\text{PS}}$	33.8	$39 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4542	$2.454 \pm 0.025$	$f\sigma_8(0.57)$	0.4729	$0.4734 \pm 0.0063$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$z_{\text{re}}$	8.89	$8.8 \pm 1.1$	$\sigma_8(0.57)$	0.6065	$0.6072 \pm 0.0098$
$A^{\text{kSZ}}$	0.00	$< 4.55$	$10^9 A_s$	2.140	$2.140^{+0.049}_{-0.056}$	$f_{2000}^{143}$	29.39	$29.9 \pm 2.9$
$A_{100}^{\text{dust}TT}$	7.49	$7.5^{+2.0}_{-1.8}$	$10^9 A_s e^{-2\tau}$	1.8724	$1.875 \pm 0.017$	$f_{2000}^{143 \times 217}$	32.24	$32.4 \pm 2.1$
$A_{143}^{\text{dust}TT}$	9.11	$9.1 \pm 1.8$	$D_{40}$	1229.1	$1230 \pm 13$	$f_{2000}^{217}$	105.74	$106.0 \pm 2.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.73	$17.2 \pm 4.1$	$D_{220}$	5723.8	$5726 \pm 39$	$\chi^2_{\text{lensing}}$	9.62	$10.3 \pm 1.8$
$A_{217}^{\text{dust}TT}$	82.0	$81.7 \pm 7.3$	$D_{810}$	2532.0	$2533 \pm 14$	$\chi^2_{\text{lowTEB}}$	10495.32	$10495.7 \pm 1.3$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0813 \pm 0.0056$	$D_{1420}$	814.89	$814.9 \pm 4.9$	$\chi^2_{\text{plik}}$	2435.1	$2454.1 \pm 6.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04915	$0.0493 \pm 0.0049$	$D_{2000}$	230.34	$230.2 \pm 1.8$	$\chi^2_{\text{H070p6}}$	0.83	$0.89 \pm 0.62$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.0999^{+0.035}_{-0.031}$	$n_{s,0.002}$	0.9661	$0.9664 \pm 0.0071$	$\chi^2_{\text{JLA}}$	706.684	$706.73 \pm 0.19$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1006^{+0.0077}_{-0.0067}$	$Y_P$	0.24494	$0.2452 \pm 0.0024$	$\chi^2_{6\text{DF}}$	0.0154	$0.046 \pm 0.063$
$A_{143 \times 217}^{\text{dust}EE}$	0.2233	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.24627	$0.2466 \pm 0.0024$	$\chi^2_{\text{MGS}}$	1.343	$1.41 \pm 0.49$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$10^5 D/H$	2.5967	$2.604 \pm 0.044$	$\chi^2_{\text{DR11CMass}}$	2.422	$2.76 \pm 0.50$
$A_{100}^{\text{dust}TE}$	0.1406	$0.140^{+0.041}_{-0.037}$	$\text{Age}/\text{Gyr}$	13.829	$13.81 \pm 0.17$	$\chi^2_{\text{DR11LOWZ}}$	0.543	$0.65 \pm 0.50$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	$z_*$	1089.839	$1089.90 \pm 0.33$	$\chi^2_{\text{prior}}$	7.1	$19.6 \pm 5.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	$r_*$	145.11	$144.9 \pm 1.7$	$\chi^2_{\text{CMB}}$	12940.0	$12960.1 \pm 6.5$
$A_{143}^{\text{dust}TE}$	0.155	$0.153 \pm 0.053$	$100\theta_*$	1.04116	$1.04115 \pm 0.00050$	$\chi^2_{\text{BAO}}$	4.323	$4.86 \pm 0.74$

Best-fit  $\chi^2_{\text{eff}} = 13659.02$ ;  $\Delta\chi^2_{\text{eff}} = -0.03$ ;  $\bar{\chi}^2_{\text{eff}} = 13692.20$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.09$ ;  $R - 1 = 0.03612$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.42 ( $\Delta$  0.01) DR11LOWZ: 0.54 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.62 ( $\Delta$  -0.12) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.32 ( $\Delta$  0.10) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.11 ( $\Delta$  -0.09) Hubble - H070p6: 0.83 ( $\Delta$  0.11) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)

## 11.26 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022240	$0.02222 \pm 0.00019$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.335 \pm 0.081$	$D_A/\text{Gpc}$	13.973	$13.97 \pm 0.16$
$\Omega_c h^2$	0.11771	$0.1179 \pm 0.0029$	$A_{217}^{\text{dust}TE}$	1.659	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.40	$1059.38 \pm 0.72$
$100\theta_{\text{MC}}$	1.041036	$1.04103 \pm 0.00042$	$c_{100}$	0.99814	$0.99812 \pm 0.00077$	$r_{\text{drag}}$	148.22	$148.2 \pm 1.8$
$\tau$	0.0652	$0.064 \pm 0.012$	$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$k_D$	0.13987	$0.1399 \pm 0.0013$
$N_{\text{eff}}$	2.972	$2.98 \pm 0.18$	$H_0$	67.23	$67.2 \pm 1.2$	$100\theta_D$	0.160746	$0.16077 \pm 0.00040$
$\ln(10^{10} A_s)$	3.0592	$3.057 \pm 0.024$	$\Omega_\Lambda$	0.6889	$0.6881 \pm 0.0075$	$z_{\text{eq}}$	3377.8	$3381 \pm 26$
$n_s$	0.9644	$0.9637 \pm 0.0076$	$\Omega_m$	0.3111	$0.3119 \pm 0.0075$	$k_{\text{eq}}$	0.010258	$0.01027 \pm 0.00011$
$y_{\text{cal}}$	1.00008	$1.0001 \pm 0.0026$	$\Omega_m h^2$	0.14060	$0.1408 \pm 0.0030$	$100\theta_{\text{eq}}$	0.81734	$0.8168 \pm 0.0051$
$A_{217}^{\text{CIB}}$	66.8	$64.2 \pm 6.8$	$\Omega_m h^3$	0.09452	$0.0946 \pm 0.0035$	$100\theta_{s,\text{eq}}$	0.45159	$0.4513 \pm 0.0026$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\sigma_8$	0.8121	$0.812 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.071620	$0.07158 \pm 0.00039$
$A_{143}^{\text{tSZ}}$	7.30	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4530	$0.4534 \pm 0.0062$	$H(0.57)$	92.50	$92.5 \pm 1.3$
$A_{100}^{\text{PS}}$	255.0	$259 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6065	$0.6067 \pm 0.0079$	$D_A(0.57)$	1395.3	$1396 \pm 22$
$A_{143}^{\text{PS}}$	38.3	$43 \pm 8$	$\sigma_8/h^{0.5}$	0.9905	$0.991 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67592	$0.6761 \pm 0.0019$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4555	$2.456 \pm 0.025$	$f\sigma_8(0.57)$	0.4721	$0.4721 \pm 0.0064$
$A_{217}^{\text{PS}}$	97.4	$96 \pm 10$	$z_{\text{re}}$	8.74	$8.6 \pm 1.1$	$\sigma_8(0.57)$	0.6043	$0.604 \pm 0.010$
$A^{\text{kSZ}}$	0.00	$< 4.42$	$10^9 A_s$	2.131	$2.128_{-0.057}^{+0.049}$	$f_{2000}^{143}$	29.06	$29.6 \pm 2.9$
$A_{100}^{\text{dust}TT}$	7.48	$7.5_{-1.8}^{+2.0}$	$10^9 A_s e^{-2\tau}$	1.8705	$1.871 \pm 0.018$	$f_{2000}^{143 \times 217}$	31.97	$32.2 \pm 2.1$
$A_{143}^{\text{dust}TT}$	9.10	$9.1 \pm 1.8$	$D_{40}$	1231.0	$1233 \pm 14$	$f_{2000}^{217}$	105.59	$105.8 \pm 2.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.59	$17.2 \pm 4.1$	$D_{220}$	5723.7	$5725 \pm 39$	$\chi_{\text{lensing}}^2$	9.55	$10.2 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.9	$81.7 \pm 7.4$	$D_{810}$	2532.6	$2532 \pm 14$	$\chi_{\text{lowTEB}}^2$	10495.48	$10496.0 \pm 1.4$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0812 \pm 0.0056$	$D_{1420}$	815.50	$815.0 \pm 4.9$	$\chi_{\text{plik}}^2$	2434.8	$2453.7 \pm 6.6$
$A_{100 \times 143}^{\text{dust}EE}$	0.04927	$0.0491 \pm 0.0049$	$D_{2000}$	230.66	$230.5 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.0290	$0.071 \pm 0.088$
$A_{100 \times 217}^{\text{dust}EE}$	0.0997	$0.100_{-0.032}^{+0.035}$	$n_{s,0.002}$	0.9644	$0.9637 \pm 0.0076$	$\chi_{\text{MGS}}^2$	1.217	$1.24 \pm 0.49$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1004_{-0.0068}^{+0.0075}$	$Y_{\text{P}}$	0.24433	$0.2443 \pm 0.0025$	$\chi_{\text{DR11CMass}}^2$	2.475	$2.89 \pm 0.69$
$A_{143 \times 217}^{\text{dust}EE}$	0.2258	$0.225 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.24565	$0.2456 \pm 0.0025$	$\chi_{\text{DR11LOWZ}}^2$	0.67	$0.85 \pm 0.62$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$10^5 D/H$	2.5902	$2.594 \pm 0.045$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1419	$0.140 \pm 0.038$	$\text{Age/Gyr}$	13.875	$13.88 \pm 0.18$	$\chi_{\text{CMB}}^2$	12939.8	$12960.0 \pm 6.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.131 \pm 0.029$	$z_*$	1089.811	$1089.85 \pm 0.34$	$\chi_{\text{BAO}}^2$	4.39	$5.1 \pm 1.0$
$A_{100 \times 217}^{\text{dust}TE}$	0.299	$0.304 \pm 0.083$	$r_*$	145.50	$145.5 \pm 1.7$			
$A_{143}^{\text{dust}TE}$	0.154	$0.153 \pm 0.053$	$100\theta_*$	1.04128	$1.04128 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.35$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.86$ ;  $R - 1 = 0.02938$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  -0.06) DR11CMass: 2.48 ( $\Delta$  0.02) DR11LOWZ: 0.67 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.55 ( $\Delta$  -0.12) lowl\_SMW\_70\_dx11d.2014.10.03

10495.48 ( $\Delta$  0.27) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.81 ( $\Delta$  -0.49)

### 11.27 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022604	$0.02259 \pm 0.00024$	$\Omega_m$	0.2953	$0.295 \pm 0.013$	$100\theta_*$	1.040431	$1.04045 \pm 0.00047$
$\Omega_c h^2$	0.12385	$0.1238 \pm 0.0023$	$\Omega_m h^2$	0.14710	$0.1470 \pm 0.0022$	$D_A/\text{Gpc}$	13.5908	$13.593 \pm 0.045$
$100\theta_{\text{MC}}$	1.040513	$1.04053 \pm 0.00048$	$\Omega_m h^3$	0.103814	$0.10378 \pm 0.00050$	$z_{\text{drag}}$	1061.039	$1061.03 \pm 0.47$
$\tau$	0.0917	$0.090 \pm 0.020$	$\sigma_8$	0.8518	$0.850 \pm 0.015$	$r_{\text{drag}}$	143.952	$143.98 \pm 0.48$
$\ln(10^{10} A_s)$	3.1277	$3.123 \pm 0.038$	$\sigma_8 \Omega_m^{0.5}$	0.4629	$0.462 \pm 0.013$	$k_D$	0.14295	$0.14290 \pm 0.00054$
$n_s$	0.9836	$0.9832 \pm 0.0064$	$\sigma_8 \Omega_m^{0.25}$	0.6279	$0.626 \pm 0.013$	$100\theta_D$	0.161708	$0.16173 \pm 0.00027$
$y_{\text{cal}}$	1.00018	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0139	$1.011 \pm 0.020$	$z_{\text{eq}}$	3325.7	$3324 \pm 50$
$A_{217}^{\text{CIB}}$	68.4	$65.5 \pm 6.6$	$\langle d^2 \rangle^{1/2}$	2.4803	$2.476 \pm 0.046$	$k_{\text{eq}}$	0.010413	$0.01041 \pm 0.00016$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	11.24	$11.0^{+1.8}_{-1.6}$	$100\theta_{\text{eq}}$	0.8279	$0.8283 \pm 0.0098$
$A_{143}^{\text{tSZ}}$	6.98	$4.8 \pm 2.0$	$10^9 A_s$	2.282	$2.274 \pm 0.086$	$100\theta_{s,\text{eq}}$	0.45681	$0.4570 \pm 0.0050$
$A_{100}^{\text{PS}}$	258.5	$265 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8997	$1.900 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.07246 \pm 0.00078$
$A_{143}^{\text{PS}}$	42.6	$47 \pm 8$	$D_{40}$	1215.6	$1217 \pm 15$	$H(0.57)$	95.941	$95.95 \pm 0.47$
$A_{143 \times 217}^{\text{PS}}$	34.8	$39^{+9}_{-10}$	$D_{220}$	5717.9	$5721 \pm 41$	$D_A(0.57)$	1337.2	$1337 \pm 13$
$A_{217}^{\text{PS}}$	97.9	$96 \pm 10$	$D_{810}$	2538.0	$2538 \pm 14$	$F_{\text{AP}}(0.57)$	0.67188	$0.6718 \pm 0.0034$
$A^{\text{kSZ}}$	0.16	$< 5.58$	$D_{1420}$	813.3	$813.0 \pm 5.1$	$f\sigma_8(0.57)$	0.4907	$0.4893 \pm 0.0097$
$A_{100}^{\text{dust}TT}$	7.57	$7.6 \pm 1.9$	$D_{2000}$	228.87	$228.7 \pm 1.9$	$\sigma_8(0.57)$	0.6378	$0.636 \pm 0.012$
$A_{143}^{\text{dust}TT}$	9.13	$9.1 \pm 1.8$	$n_{s,0.002}$	0.9836	$0.9832 \pm 0.0064$	$f_{2000}^{143}$	31.53	$32.1 \pm 2.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.86	$17.3 \pm 4.2$	$Y_{\text{P}}$	0.250648	$0.25064 \pm 0.00010$	$f_{2000}^{143 \times 217}$	33.90	$34.1 \pm 2.1$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.251993	$0.25199 \pm 0.00010$	$f_{2000}^{217}$	107.30	$107.5 \pm 2.0$
$c_{100}$	0.99792	$0.99789 \pm 0.00077$	$10^5 D/H$	2.6805	$2.683 \pm 0.045$	$\chi_{\text{lowTEB}}^2$	10495.36	$10496.0 \pm 2.7$
$c_{217}$	0.99606	$0.9961 \pm 0.0014$	$\text{Age}/\text{Gyr}$	13.4108	$13.411 \pm 0.039$	$\chi_{\text{plik}}^2$	766.0	$779.8 \pm 5.9$
$H_0$	70.57	$70.6 \pm 1.0$	$z_*$	1090.339	$1090.35 \pm 0.44$	$\chi_{\text{prior}}^2$	2.04	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.7047	$0.705 \pm 0.013$	$r_*$	141.403	$141.43 \pm 0.49$	$\chi_{\text{CMB}}^2$	11261.4	$11275.8 \pm 5.6$

Best-fit  $\chi_{\text{eff}}^2 = 11263.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.25$ ;  $R - 1 = 0.00929$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.36 plik\_dx11dr2\_HM\_v18\_TT: 766.01

## 11.28 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022615	$0.02261 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.301 \pm 0.084$	$10^5 \text{D/H}$	2.6784	$2.680 \pm 0.031$
$\Omega_c h^2$	0.12490	$0.1249 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	Age/Gyr	13.4218	$13.422 \pm 0.026$
$100\theta_{\text{MC}}$	1.040264	$1.04025 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.336 \pm 0.080$	$z_*$	1090.412	$1090.42 \pm 0.30$
$\tau$	0.0937	$0.091 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.659	$1.66 \pm 0.26$	$r_*$	141.141	$141.15 \pm 0.32$
$\ln(10^{10} A_s)$	3.1345	$3.130 \pm 0.034$	$c_{100}$	0.99813	$0.99812 \pm 0.00077$	$100\theta_*$	1.040173	$1.04017 \pm 0.00032$
$n_s$	0.98104	$0.9804 \pm 0.0049$	$c_{217}$	0.99609	$0.9961 \pm 0.0014$	$D_A/\text{Gpc}$	13.5690	$13.570 \pm 0.029$
$y_{\text{cal}}$	1.00023	$1.0005 \pm 0.0025$	$H_0$	70.12	$70.12 \pm 0.69$	$z_{\text{drag}}$	1061.153	$1061.14 \pm 0.31$
$A_{217}^{\text{CIB}}$	68.7	$65.6 \pm 6.6$	$\Omega_\Lambda$	0.6987	$0.6985 \pm 0.0088$	$r_{\text{drag}}$	143.678	$143.68 \pm 0.31$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.3013	$0.3015 \pm 0.0088$	$k_D$	0.143251	$0.14324 \pm 0.00034$
$A_{143}^{\text{tSZ}}$	7.31	$5.1 \pm 2.0$	$\Omega_m h^2$	0.14816	$0.1482 \pm 0.0015$	$100\theta_D$	0.161624	$0.16163 \pm 0.00018$
$A_{100}^{\text{PS}}$	259.4	$266 \pm 28$	$\Omega_m h^3$	0.103897	$0.10388 \pm 0.00033$	$z_{\text{eq}}$	3349.8	$3350 \pm 33$
$A_{143}^{\text{PS}}$	40.9	$46 \pm 8$	$\sigma_8$	0.8571	$0.855 \pm 0.014$	$k_{\text{eq}}$	0.010488	$0.01049 \pm 0.00010$
$A_{143 \times 217}^{\text{PS}}$	34.4	$40_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.5}$	0.4705	$0.4693 \pm 0.0097$	$100\theta_{\text{eq}}$	0.8232	$0.8233 \pm 0.0064$
$A_{217}^{\text{PS}}$	97.2	$97 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6350	$0.633 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45438	$0.4544 \pm 0.0033$
$A^{\text{kSZ}}$	0.01	$< 5.09$	$\sigma_8/h^{0.5}$	1.0235	$1.021 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.07205	$0.07205 \pm 0.00051$
$A_{100}^{\text{dust}TT}$	7.49	$7.6 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5047	$2.500 \pm 0.039$	$H(0.57)$	95.770	$95.77_{-0.33}^{+0.29}$
$A_{143}^{\text{dust}TT}$	9.08	$9.1 \pm 1.8$	$z_{\text{re}}$	11.44	$11.2_{-1.5}^{+1.7}$	$D_A(0.57)$	1342.7	$1342.8 \pm 8.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.66	$17.3 \pm 4.2$	$10^9 A_s$	2.298	$2.288 \pm 0.078$	$F_{\text{AP}}(0.57)$	0.67342	$0.6735 \pm 0.0023$
$A_{217}^{\text{dust}TT}$	81.6	$81.6 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.9050	$1.906 \pm 0.012$	$f\sigma_8(0.57)$	0.4955	$0.4942 \pm 0.0081$
$A_{100}^{\text{dust}EE}$	0.0821	$0.0820 \pm 0.0057$	$D_{40}$	1223.3	$1225 \pm 13$	$\sigma_8(0.57)$	0.6402	$0.639 \pm 0.011$
$A_{100 \times 143}^{\text{dust}EE}$	0.04985	$0.0497 \pm 0.0050$	$D_{220}$	5723.9	$5729 \pm 39$	$f_{2000}^{143}$	30.94	$31.6 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0984	$0.099 \pm 0.032$	$D_{810}$	2539.4	$2540 \pm 14$	$f_{2000}^{143 \times 217}$	33.59	$33.9 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1013	$0.1011 \pm 0.0068$	$D_{1420}$	813.21	$813.2 \pm 4.8$	$f_{2000}^{217}$	106.97	$107.3 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2205	$0.221 \pm 0.046$	$D_{2000}$	228.97	$228.9 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10496.26	$10496.7 \pm 2.6$
$A_{217}^{\text{dust}EE}$	0.647	$0.64 \pm 0.13$	$n_{\text{s},0.002}$	0.98104	$0.9804 \pm 0.0049$	$\chi_{\text{plik}}^2$	2436.8	$2456.1 \pm 7.0$
$A_{100}^{\text{dust}TE}$	0.1412	$0.141 \pm 0.038$	$Y_{\text{P}}$	0.250653	$0.250650 \pm 0.000071$	$\chi_{\text{prior}}^2$	7.6	$19.9 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.131 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.251998	$0.251995 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12933.0	$12952.9 \pm 6.7$

Best-fit  $\chi_{\text{eff}}^2 = 12940.62$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.81$ ;  $R - 1 = 0.00717$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.26 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2436.79

## 11.29 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022748	$0.02277 \pm 0.00024$	$\Omega_m$	0.2872	$0.287 \pm 0.013$	$100\theta_*$	1.040157	$1.04019 \pm 0.00046$
$\Omega_c h^2$	0.12571	$0.1256 \pm 0.0024$	$\Omega_m h^2$	0.14910	$0.1490 \pm 0.0023$	$D_A/\text{Gpc}$	13.4615	$13.463 \pm 0.045$
$100\theta_{\text{MC}}$	1.040366	$1.04040 \pm 0.00047$	$\Omega_m h^3$	0.10744	$0.10747 \pm 0.00051$	$z_{\text{drag}}$	1061.649	$1061.69 \pm 0.47$
$\tau$	0.0954	$0.098 \pm 0.020$	$\sigma_8$	0.8595	$0.861 \pm 0.015$	$r_{\text{drag}}$	142.504	$142.51 \pm 0.48$
$\ln(10^{10} A_s)$	3.1396	$3.145 \pm 0.038$	$\sigma_8 \Omega_m^{0.5}$	0.4606	$0.461 \pm 0.013$	$k_D$	0.14399	$0.14399 \pm 0.00054$
$n_s$	0.9910	$0.9914 \pm 0.0067$	$\sigma_8 \Omega_m^{0.25}$	0.6292	$0.630 \pm 0.013$	$100\theta_D$	0.162084	$0.16207 \pm 0.00027$
$y_{\text{cal}}$	1.00033	$1.0005 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0126	$1.014 \pm 0.020$	$z_{\text{eq}}$	3295	$3293 \pm 50$
$A_{217}^{\text{CIB}}$	69.2	$66.0 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.4676	$2.472 \pm 0.045$	$k_{\text{eq}}$	0.010436	$0.01043 \pm 0.00016$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	11.59	$11.7^{+1.8}_{-1.5}$	$100\theta_{\text{eq}}$	0.8340	$0.835 \pm 0.010$
$A_{143}^{\text{tSZ}}$	6.09	$4.6 \pm 2.0$	$10^9 A_s$	2.309	$2.324 \pm 0.087$	$100\theta_{s,\text{eq}}$	0.4599	$0.4602 \pm 0.0051$
$A_{100}^{\text{PS}}$	265.0	$268 \pm 28$	$10^9 A_s e^{-2\tau}$	1.9083	$1.908 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07290	$0.07296 \pm 0.00081$
$A_{143}^{\text{PS}}$	44.0	$48 \pm 8$	$D_{40}$	1207.2	$1209 \pm 15$	$H(0.57)$	97.33	$97.39 \pm 0.50$
$A_{143 \times 217}^{\text{PS}}$	33.4	$40^{+9}_{-10}$	$D_{220}$	5721.4	$5725 \pm 41$	$D_A(0.57)$	1313.9	$1313 \pm 13$
$A_{217}^{\text{PS}}$	95.6	$96 \pm 10$	$D_{810}$	2540.0	$2541 \pm 14$	$F_{\text{AP}}(0.57)$	0.66974	$0.6696 \pm 0.0034$
$A^{\text{kSZ}}$	1.81	$< 5.91$	$D_{1420}$	812.5	$812.8 \pm 5.0$	$f\sigma_8(0.57)$	0.4927	$0.4935 \pm 0.0097$
$A_{100}^{\text{dustTT}}$	7.49	$7.6 \pm 1.9$	$D_{2000}$	228.00	$228.2 \pm 1.8$	$\sigma_8(0.57)$	0.6458	$0.648 \pm 0.012$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$n_{s,0.002}$	0.9910	$0.9914 \pm 0.0067$	$f_{2000}^{143}$	32.95	$32.9 \pm 3.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.57	$17.3 \pm 4.2$	$Y_{\text{P}}$	0.252987	$0.25300 \pm 0.00011$	$f_{2000}^{143 \times 217}$	34.93	$34.8 \pm 2.2$
$A_{217}^{\text{dustTT}}$	81.7	$81.7 \pm 7.5$	$Y_{\text{P}}^{\text{BBN}}$	0.254340	$0.25435 \pm 0.00011$	$f_{2000}^{217}$	108.29	$108.1 \pm 2.1$
$c_{100}$	0.99790	$0.99790 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.7139	$2.711 \pm 0.046$	$\chi_{\text{lowTEB}}^2$	10494.90	$10496.1 \pm 2.9$
$c_{217}$	0.99626	$0.9962 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.2377	$13.234 \pm 0.039$	$\chi_{\text{plik}}^2$	767.8	$781.1 \pm 5.9$
$H_0$	72.06	$72.1 \pm 1.1$	$z_*$	1090.483	$1090.45 \pm 0.45$	$\chi_{\text{prior}}^2$	2.33	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.7128	$0.713 \pm 0.013$	$r_*$	140.020	$140.04 \pm 0.49$	$\chi_{\text{CMB}}^2$	11262.7	$11277.3 \pm 5.6$

Best-fit  $\chi_{\text{eff}}^2 = 11265.05$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.75$ ;  $R - 1 = 0.00538$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.90 plik\_dx11dr2\_HM\_v18\_TT: 767.82

### 11.30 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup57

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022771	$0.02276 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.302 \pm 0.084$	$10^5 \text{D/H}$	2.7095	$2.712 \pm 0.031$
$\Omega_c h^2$	0.12727	$0.1273 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	Age/Gyr	13.2518	$13.253 \pm 0.026$
$100\theta_{\text{MC}}$	1.040025	$1.04002 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.338 \pm 0.081$	$z_*$	1090.588	$1090.61 \pm 0.30$
$\tau$	0.0985	$0.096 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.659	$1.67 \pm 0.25$	$r_*$	139.634	$139.64 \pm 0.31$
$\ln(10^{10} A_s)$	3.1495	$3.145 \pm 0.033$	$c_{100}$	0.99812	$0.99810 \pm 0.00077$	$100\theta_*$	1.039814	$1.03981 \pm 0.00032$
$n_s$	0.98802	$0.9875 \pm 0.0049$	$c_{217}$	0.99615	$0.9962 \pm 0.0014$	$D_A/\text{Gpc}$	13.4288	$13.429 \pm 0.029$
$y_{\text{cal}}$	1.00029	$1.0005 \pm 0.0025$	$H_0$	71.41	$71.40 \pm 0.71$	$z_{\text{drag}}$	1061.802	$1061.79 \pm 0.31$
$A_{217}^{\text{CIB}}$	68.9	$66.3 \pm 6.6$	$\Omega_\Lambda$	0.7045	$0.7042 \pm 0.0086$	$r_{\text{drag}}$	142.103	$142.11 \pm 0.30$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m$	0.2955	$0.2958 \pm 0.0086$	$k_D$	0.144455	$0.14443 \pm 0.00033$
$A_{143}^{\text{tSZ}}$	7.13	$4.9 \pm 2.0$	$\Omega_m h^2$	0.15069	$0.1507 \pm 0.0015$	$100\theta_D$	0.161951	$0.16197 \pm 0.00018$
$A_{100}^{\text{PS}}$	263.1	$269 \pm 28$	$\Omega_m h^3$	0.107607	$0.10758 \pm 0.00033$	$z_{\text{eq}}$	3330.8	$3331 \pm 33$
$A_{143}^{\text{PS}}$	42.9	$47 \pm 8$	$\sigma_8$	0.8677	$0.866 \pm 0.014$	$k_{\text{eq}}$	0.010548	$0.01055 \pm 0.00010$
$A_{143 \times 217}^{\text{PS}}$	35.3	$40_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.5}$	0.4717	$0.4707 \pm 0.0098$	$100\theta_{\text{eq}}$	0.8272	$0.8272 \pm 0.0065$
$A_{217}^{\text{PS}}$	97.7	$96 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6398	$0.638 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45629	$0.4563 \pm 0.0033$
$A^{\text{kSZ}}$	0.27	$< 5.56$	$\sigma_8/h^{0.5}$	1.0268	$1.024 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.07235	$0.07235 \pm 0.00052$
$A_{100}^{\text{dust}TT}$	7.59	$7.7 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5015	$2.497 \pm 0.039$	$H(0.57)$	97.089	$97.08 \pm 0.32$
$A_{143}^{\text{dust}TT}$	9.20	$9.2 \pm 1.8$	$z_{\text{re}}$	11.88	$11.6_{-1.4}^{+1.6}$	$D_A(0.57)$	1321.5	$1321.8 \pm 8.6$
$A_{143 \times 217}^{\text{dust}TT}$	18.03	$17.3 \pm 4.2$	$10^9 A_s$	2.332	$2.323 \pm 0.078$	$F_{\text{AP}}(0.57)$	0.67193	$0.6720 \pm 0.0022$
$A_{217}^{\text{dust}TT}$	82.0	$81.4 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.9152	$1.916 \pm 0.013$	$f\sigma_8(0.57)$	0.4999	$0.4987 \pm 0.0082$
$A_{100}^{\text{dust}EE}$	0.0822	$0.0823 \pm 0.0056$	$D_{40}$	1216.2	$1217 \pm 13$	$\sigma_8(0.57)$	0.6497	$0.648 \pm 0.011$
$A_{100 \times 143}^{\text{dust}EE}$	0.04993	$0.0501 \pm 0.0050$	$D_{220}$	5724.4	$5727 \pm 39$	$f_{2000}^{143}$	31.94	$32.5 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0985	$0.099 \pm 0.033$	$D_{810}$	2541.8	$2542 \pm 14$	$f_{2000}^{143 \times 217}$	34.37	$34.6 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1016	$0.1015 \pm 0.0068$	$D_{1420}$	812.61	$812.4 \pm 4.8$	$f_{2000}^{217}$	107.67	$107.9 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2203	$0.219 \pm 0.047$	$D_{2000}$	228.28	$228.1 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10496.02	$10496.4 \pm 2.7$
$A_{217}^{\text{dust}EE}$	0.638	$0.64 \pm 0.13$	$n_{\text{s},0.002}$	0.98802	$0.9875 \pm 0.0049$	$\chi_{\text{plik}}^2$	2441.4	$2460.4 \pm 7.0$
$A_{100}^{\text{dust}TE}$	0.1408	$0.141 \pm 0.038$	$Y_{\text{P}}$	0.252997	$0.252991 \pm 0.000071$	$\chi_{\text{prior}}^2$	7.7	$20 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.254350	$0.254345 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12937.5	$12956.8 \pm 6.8$

Best-fit  $\chi_{\text{eff}}^2 = 12945.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.07$ ;  $R - 1 = 0.01276$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.02 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2441.43

### 11.31 base\_nnu\_plikHM\_TT\_lowTEB\_nnu1

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.023135	$0.02316 \pm 0.00025$	$\Omega_m$	0.2667	$0.268^{+0.012}_{-0.013}$	$100\theta_*$	1.039652	$1.03964 \pm 0.00047$
$\Omega_c h^2$	0.12964	$0.1298 \pm 0.0025$	$\Omega_m h^2$	0.15342	$0.1536 \pm 0.0024$	$D_A/\text{Gpc}$	13.1723	$13.168 \pm 0.043$
$100\theta_{\text{MC}}$	1.040157	$1.04014 \pm 0.00048$	$\Omega_m h^3$	0.11636	$0.11643 \pm 0.00055$	$z_{\text{drag}}$	1063.137	$1063.18 \pm 0.47$
$\tau$	0.1112	$0.113 \pm 0.021$	$\sigma_8$	0.8822	$0.885 \pm 0.017$	$r_{\text{drag}}$	139.271	$139.21 \pm 0.46$
$\ln(10^{10} A_s)$	3.1791	$3.184 \pm 0.040$	$\sigma_8 \Omega_m^{0.5}$	0.4556	$0.458 \pm 0.013$	$k_D$	0.14640	$0.14648 \pm 0.00053$
$n_s$	1.0098	$1.0101 \pm 0.0069$	$\sigma_8 \Omega_m^{0.25}$	0.6340	$0.636 \pm 0.014$	$100\theta_D$	0.162915	$0.16288 \pm 0.00027$
$y_{\text{cal}}$	1.00040	$1.0005 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0130	$1.016 \pm 0.020$	$z_{\text{eq}}$	3218.7	$3223 \pm 50$
$A_{217}^{\text{CIB}}$	70.3	$67.6 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.4458	$2.453 \pm 0.046$	$k_{\text{eq}}$	0.010462	$0.01048 \pm 0.00016$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.001	$< 0.593$	$z_{\text{re}}$	12.93	$13.0^{+1.9}_{-1.5}$	$100\theta_{\text{eq}}$	0.8501	$0.850 \pm 0.010$
$A_{143}^{\text{tSZ}}$	4.75	$4.2^{+2.0}_{-2.3}$	$10^9 A_s$	2.402	$2.416 \pm 0.098$	$100\theta_{s,\text{eq}}$	0.4679	$0.4676 \pm 0.0053$
$A_{100}^{\text{PS}}$	276.8	$275 \pm 28$	$10^9 A_s e^{-2\tau}$	1.9234	$1.925 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.07417	$0.07414 \pm 0.00084$
$A_{143}^{\text{PS}}$	46.4	$51 \pm 8$	$D_{40}$	1187.7	$1190 \pm 14$	$H(0.57)$	100.78	$100.80 \pm 0.56$
$A_{143 \times 217}^{\text{PS}}$	31.6	$40^{+9}_{-10}$	$D_{220}$	5725.5	$5727 \pm 41$	$D_A(0.57)$	1258.6	$1259 \pm 13$
$A_{217}^{\text{PS}}$	92.4	$96 \pm 10$	$D_{810}$	2542.9	$2544 \pm 14$	$F_{\text{AP}}(0.57)$	0.66427	$0.6645 \pm 0.0033$
$A^{\text{kSZ}}$	4.52	$5.2^{+3.6}_{-2.6}$	$D_{1420}$	810.8	$811.5 \pm 5.2$	$f\sigma_8(0.57)$	0.4987	$0.500 \pm 0.010$
$A_{100}^{\text{dustTT}}$	7.65	$7.7 \pm 1.9$	$D_{2000}$	226.27	$226.6 \pm 1.9$	$\sigma_8(0.57)$	0.6688	$0.671 \pm 0.013$
$A_{143}^{\text{dustTT}}$	9.16	$9.2 \pm 1.8$	$n_{s,0.002}$	1.0098	$1.0101 \pm 0.0069$	$f_{2000}^{143}$	35.40	$35.0 \pm 3.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.02	$17.5 \pm 4.2$	$Y_{\text{P}}$	0.258339	$0.25835^{+0.00011}_{-0.00010}$	$f_{2000}^{143 \times 217}$	36.72	$36.5 \pm 2.2$
$A_{217}^{\text{dustTT}}$	80.8	$81.5 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.259712	$0.25972^{+0.00011}_{-0.00010}$	$f_{2000}^{217}$	109.97	$109.6 \pm 2.1$
$c_{100}$	0.99787	$0.99791 \pm 0.00077$	$10^5 \text{D}/\text{H}$	2.7819	$2.778 \pm 0.047$	$\chi_{\text{lowTEB}}^2$	10495.37	$10496.6 \pm 3.8$
$c_{217}$	0.99637	$0.9963 \pm 0.0014$	$\text{Age}/\text{Gyr}$	12.8361	$12.834 \pm 0.040$	$\chi_{\text{plik}}^2$	772.2	$785.8 \pm 6.4$
$H_0$	75.84	$75.8 \pm 1.2$	$z_*$	1090.726	$1090.71 \pm 0.46$	$\chi_{\text{prior}}^2$	2.87	$7.6 \pm 3.6$
$\Omega_\Lambda$	0.7333	$0.732^{+0.013}_{-0.012}$	$r_*$	136.946	$136.90 \pm 0.47$	$\chi_{\text{CMB}}^2$	11267.5	$11282.5 \pm 5.6$

Best-fit  $\chi_{\text{eff}}^2 = 11270.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 11290.08$ ;  $R - 1 = 0.00663$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10495.37 plik\_dx11dr2\_HM\_v18\_TT: 772.19



### 11.32 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnu1

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.023117	$0.02313 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.300	$0.301 \pm 0.085$	$10^5 \text{D/H}$	2.7853	$2.783 \pm 0.031$
$\Omega_c h^2$	0.13287	$0.1328 \pm 0.0016$	$A_{143}^{\text{dust}TE}$	0.152	$0.152 \pm 0.054$	Age/Gyr	12.8680	$12.866 \pm 0.025$
$100\theta_{\text{MC}}$	1.039565	$1.03957 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.334	$0.333 \pm 0.080$	$z_*$	1091.008	$1090.99 \pm 0.30$
$\tau$	0.1083	$0.110 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.662	$1.66 \pm 0.26$	$r_*$	136.244	$136.25 \pm 0.30$
$\ln(10^{10} A_s)$	3.1795	$3.184 \pm 0.034$	$c_{100}$	0.99803	$0.99805 \pm 0.00077$	$100\theta_*$	1.039064	$1.03907 \pm 0.00032$
$n_s$	1.0036	$1.0041 \pm 0.0050$	$c_{217}$	0.99642	$0.9964 \pm 0.0015$	$D_A/\text{Gpc}$	13.1122	$13.113 \pm 0.028$
$y_{\text{cal}}$	1.00025	$1.0005 \pm 0.0024$	$H_0$	74.47	$74.52 \pm 0.73$	$z_{\text{drag}}$	1063.290	$1063.33 \pm 0.30$
$A_{217}^{\text{CIB}}$	70.8	$68.0 \pm 6.7$	$\Omega_\Lambda$	0.7176	$0.7179 \pm 0.0082$	$r_{\text{drag}}$	138.562	$138.56 \pm 0.30$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.581$	$\Omega_m$	0.2824	$0.2821 \pm 0.0082$	$k_D$	0.147212	$0.14722 \pm 0.00034$
$A_{143}^{\text{tSZ}}$	5.62	$4.6 \pm 2.0$	$\Omega_m h^2$	0.15663	$0.1566 \pm 0.0016$	$100\theta_D$	0.162753	$0.16274 \pm 0.00018$
$A_{100}^{\text{PS}}$	275.5	$275 \pm 28$	$\Omega_m h^3$	0.116643	$0.11666 \pm 0.00035$	$z_{\text{eq}}$	3286.4	$3285 \pm 33$
$A_{143}^{\text{PS}}$	45.4	$50 \pm 8$	$\sigma_8$	0.8908	$0.892 \pm 0.014$	$k_{\text{eq}}$	0.010682	$0.01068 \pm 0.00011$
$A_{143 \times 217}^{\text{PS}}$	32.7	$40_{-10}^{+9}$	$\sigma_8 \Omega_m^{0.5}$	0.4734	$0.4740 \pm 0.0099$	$100\theta_{\text{eq}}$	0.8364	$0.8367 \pm 0.0066$
$A_{217}^{\text{PS}}$	92.8	$95 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6494	$0.650 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.46085	$0.4610 \pm 0.0034$
$A^{\text{kSZ}}$	3.4	—	$\sigma_8/h^{0.5}$	1.0322	$1.034 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.07307	$0.07310 \pm 0.00053$
$A_{100}^{\text{dust}TT}$	7.78	$7.8 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.4902	$2.494 \pm 0.039$	$H(0.57)$	100.217	$100.25 \pm 0.34$
$A_{143}^{\text{dust}TT}$	9.33	$9.3 \pm 1.8$	$z_{\text{re}}$	12.79	$12.9_{-1.3}^{+1.5}$	$D_A(0.57)$	1273.7	$1273.2 \pm 8.4$
$A_{143 \times 217}^{\text{dust}TT}$	17.55	$17.6 \pm 4.2$	$10^9 A_s$	2.404	$2.415 \pm 0.081$	$F_{\text{AP}}(0.57)$	0.66849	$0.6684 \pm 0.0022$
$A_{217}^{\text{dust}TT}$	81.2	$81.4 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.9353	$1.937 \pm 0.012$	$f\sigma_8(0.57)$	0.5090	$0.5098 \pm 0.0084$
$A_{100}^{\text{dust}EE}$	0.0833	$0.0832 \pm 0.0056$	$D_{40}$	1199.5	$1201 \pm 13$	$\sigma_8(0.57)$	0.6706	$0.672 \pm 0.011$
$A_{100 \times 143}^{\text{dust}EE}$	0.05100	$0.0510 \pm 0.0050$	$D_{220}$	5721.1	$5725 \pm 38$	$f_{2000}^{143}$	34.75	$34.5 \pm 2.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0985	$0.098 \pm 0.033$	$D_{810}$	2544.4	$2546 \pm 13$	$f_{2000}^{143 \times 217}$	36.44	$36.3 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.1025	$0.1025 \pm 0.0069$	$D_{1420}$	810.05	$810.9 \pm 4.6$	$f_{2000}^{217}$	109.57	$109.4 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2158	$0.216 \pm 0.047$	$D_{2000}$	226.27	$226.6 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10495.71	$10496.6 \pm 3.2$
$A_{217}^{\text{dust}EE}$	0.634	$0.63 \pm 0.13$	$n_{\text{s},0.002}$	1.0036	$1.0041 \pm 0.0050$	$\chi_{\text{plik}}^2$	2455.7	$2474.5 \pm 7.3$
$A_{100}^{\text{dust}TE}$	0.1404	$0.140 \pm 0.038$	$Y_{\text{P}}$	0.258332	$0.258338 \pm 0.000069$	$\chi_{\text{prior}}^2$	9.0	$21 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.131 \pm 0.029$	$Y_{\text{P}}^{\text{BBN}}$	0.259704	$0.259710 \pm 0.000069$	$\chi_{\text{CMB}}^2$	12951.4	$12971.2 \pm 6.9$

Best-fit  $\chi_{\text{eff}}^2 = 12960.48$ ;  $\bar{\chi}_{\text{eff}}^2 = 12992.28$ ;  $R - 1 = 0.00975$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.71 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2455.73

### 11.33 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022503	$0.02249 \pm 0.00020$	$\Omega_m h^3$	0.103802	$0.10376 \pm 0.00049$	$k_D$	0.143149	$0.14309 \pm 0.00045$
$\Omega_c h^2$	0.12532	$0.1252 \pm 0.0014$	$\sigma_8$	0.8522	$0.851 \pm 0.015$	$100\theta_D$	0.161778	$0.16180 \pm 0.00026$
$100\theta_{MC}$	1.040352	$1.04036 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	0.4697	$0.468 \pm 0.010$	$z_{eq}$	3356.8	$3354 \pm 30$
$\tau$	0.0855	$0.085 \pm 0.018$	$\sigma_8 \Omega_m^{0.25}$	0.6327	$0.631 \pm 0.012$	$k_{eq}$	0.010510	$0.010500 \pm 0.000094$
$\ln(10^{10} A_s)$	3.1193	$3.117 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0192	$1.017 \pm 0.018$	$100\theta_{eq}$	0.8217	$0.8223 \pm 0.0056$
$n_s$	0.97989	$0.9799 \pm 0.0045$	$\langle d^2 \rangle^{1/2}$	2.4927	$2.489 \pm 0.044$	$100\theta_{s,eq}$	0.45368	$0.4540 \pm 0.0029$
$y_{cal}$	1.00048	$1.0004 \pm 0.0025$	$z_{re}$	10.77	$10.6^{+1.8}_{-1.5}$	$r_{drag}/D_V(0.57)$	0.071935	$0.07198 \pm 0.00044$
$A_{217}^{CIB}$	68.8	$65.7 \pm 6.6$	$10^9 A_s$	2.263	$2.259 \pm 0.081$	$H(0.57)$	95.662	$95.67 \pm 0.29$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.9074	$1.906 \pm 0.012$	$D_A(0.57)$	1345.5	$1345.0 \pm 7.7$
$A_{143}^{tSZ}$	6.76	$4.7 \pm 2.0$	$D_{40}$	1221.8	$1222 \pm 13$	$F_{AP}(0.57)$	0.67405	$0.6739 \pm 0.0020$
$A_{100}^{PS}$	260.8	$266 \pm 28$	$D_{220}$	5717.1	$5716 \pm 40$	$f\sigma_8(0.57)$	0.4933	$0.4923 \pm 0.0090$
$A_{143}^{PS}$	43.5	$48 \pm 8$	$D_{810}$	2540.8	$2540 \pm 14$	$\sigma_8(0.57)$	0.6359	$0.635 \pm 0.011$
$A_{143 \times 217}^{PS}$	34.8	$40^{+9}_{-10}$	$D_{1420}$	813.0	$812.6 \pm 5.0$	$f_{2000}^{143}$	32.15	$32.6 \pm 2.9$
$A_{217}^{PS}$	97.5	$97 \pm 10$	$D_{2000}$	228.56	$228.4 \pm 1.8$	$f_{2000}^{143 \times 217}$	34.39	$34.5 \pm 2.0$
$A^{kSZ}$	0.62	$< 5.62$	$n_{s,0.002}$	0.97989	$0.9799 \pm 0.0045$	$f_{2000}^{217}$	107.79	$107.9 \pm 2.0$
$A_{100}^{dustTT}$	7.45	$7.5 \pm 1.9$	$Y_P$	0.250603	$0.250599 \pm 0.000089$	$\chi_{lowTEB}^2$	10495.24	$10495.9 \pm 2.4$
$A_{143}^{dustTT}$	9.04	$9.1 \pm 1.9$	$Y_P^{BBN}$	0.251949	$0.251944 \pm 0.000089$	$\chi_{plik}^2$	766.5	$779.6 \pm 5.7$
$A_{143 \times 217}^{dustTT}$	17.82	$17.3 \pm 4.2$	$10^5 D/H$	2.7000	$2.702 \pm 0.039$	$\chi_{6DF}^2$	0.0000	$0.043 \pm 0.060$
$A_{217}^{dustTT}$	82.0	$81.6 \pm 7.4$	$Age/Gyr$	13.4316	$13.432 \pm 0.028$	$\chi_{MGS}^2$	1.68	$1.81 \pm 0.62$
$c_{100}$	0.99793	$0.99788 \pm 0.00078$	$z_*$	1090.593	$1090.60 \pm 0.31$	$\chi_{DR11CMass}^2$	2.496	$3.00 \pm 0.76$
$c_{217}$	0.99617	$0.9961 \pm 0.0015$	$r_*$	141.121	$141.16 \pm 0.32$	$\chi_{DR11LOWZ}^2$	0.282	$0.39 \pm 0.43$
$H_0$	69.91	$69.96 \pm 0.60$	$100\theta_*$	1.040278	$1.04029 \pm 0.00041$	$\chi_{prior}^2$	2.13	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.6963	$0.6968^{+0.0082}_{-0.0074}$	$D_A/Gpc$	13.5657	$13.569 \pm 0.031$	$\chi_{CMB}^2$	11261.8	$11275.5 \pm 5.4$
$\Omega_m$	0.3037	$0.3032^{+0.0074}_{-0.0082}$	$z_{drag}$	1060.925	$1060.89 \pm 0.44$	$\chi_{BAO}^2$	4.46	$5.2 \pm 1.2$
$\Omega_m h^2$	0.14847	$0.1483 \pm 0.0013$	$r_{drag}$	143.695	$143.74 \pm 0.34$			

Best-fit  $\chi_{eff}^2 = 11268.34$ ;  $\bar{\chi}_{eff}^2 = 11288.24$ ;  $R - 1 = 0.00687$

$\chi_{eff}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.50 DR11LOWZ: 0.28 CMB - lowl.SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10495.25 plik\_dx11dr2\_HM\_v18.TT: 766.51

### 11.34 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022477	$0.02247 \pm 0.00020$	$\sigma_8$	0.8335	$0.8332 \pm 0.0094$	$z_{\text{eq}}$	3341.5	$3339 \pm 27$
$\Omega_c h^2$	0.12467	$0.1246 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4569	$0.4564 \pm 0.0066$	$k_{\text{eq}}$	0.010462	$0.010455 \pm 0.000086$
$100\theta_{\text{MC}}$	1.040407	$1.04042 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	0.6171	$0.6166 \pm 0.0071$	$100\theta_{\text{eq}}$	0.8245	$0.8250 \pm 0.0052$
$\tau$	0.0669	$0.067 \pm 0.013$	$\sigma_8/h^{0.5}$	0.9953	$0.995 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45515	$0.4554 \pm 0.0027$
$\ln(10^{10} A_s)$	3.0797	$3.079 \pm 0.024$	$\langle d^2 \rangle^{1/2}$	2.4375	$2.435 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.072137	$0.07217 \pm 0.00041$
$n_s$	0.97996	$0.9805 \pm 0.0044$	$z_{\text{re}}$	9.04	$9.0 \pm 1.3$	$H(0.57)$	95.724	$95.73 \pm 0.28$
$y_{\text{cal}}$	1.00019	$1.0002 \pm 0.0025$	$10^9 A_s$	2.175	$2.175 \pm 0.053$	$D_A(0.57)$	1342.9	$1342.6 \pm 7.2$
$A_{217}^{\text{CIB}}$	69.2	$66.6 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.9026	$1.902 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67320	$0.6731 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.001	$< 0.605$	$D_{40}$	1212.4	$1212 \pm 12$	$f\sigma_8(0.57)$	0.4816	$0.4813 \pm 0.0054$
$A_{143}^{\text{tSZ}}$	6.07	$4.5^{+2.0}_{-2.2}$	$D_{220}$	5714.8	$5712 \pm 40$	$\sigma_8(0.57)$	0.6228	$0.6227 \pm 0.0076$
$A_{100}^{\text{PS}}$	266.4	$269 \pm 28$	$D_{810}$	2538.2	$2538 \pm 14$	$f_{2000}^{143}$	33.38	$33.5 \pm 2.8$
$A_{143}^{\text{PS}}$	44.1	$49 \pm 8$	$D_{1420}$	812.15	$812.3 \pm 4.9$	$f_{2000}^{143 \times 217}$	35.24	$35.2 \pm 1.9$
$A_{143 \times 217}^{\text{PS}}$	33.2	$40^{+9}_{-10}$	$D_{2000}$	227.75	$227.8 \pm 1.7$	$f_{2000}^{217}$	108.53	$108.5 \pm 1.9$
$A_{217}^{\text{PS}}$	95.3	$96 \pm 10$	$n_{\text{s},0.002}$	0.97996	$0.9805 \pm 0.0044$	$\chi_{\text{lensing}}^2$	9.94	$10.5 \pm 1.7$
$A^{\text{kSZ}}$	2.26	$4.7^{+1.9}_{-4.2}$	$Y_{\text{P}}$	0.250592	$0.250587 \pm 0.000087$	$\chi_{\text{lowTEB}}^2$	10493.58	$10493.92 \pm 0.88$
$A_{100}^{\text{dustTT}}$	7.58	$7.6 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.251938	$0.251933 \pm 0.000087$	$\chi_{\text{plik}}^2$	769.0	$782.1 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.19	$9.1 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.7049	$2.707 \pm 0.038$	$\chi_{\text{H070p6}}^2$	0.0194	$0.044 \pm 0.059$
$A_{143 \times 217}^{\text{dustTT}}$	17.53	$17.4 \pm 4.3$	$\text{Age}/\text{Gyr}$	13.4299	$13.430 \pm 0.028$	$\chi_{\text{JLA}}^2$	706.527	$706.564 \pm 0.095$
$A_{217}^{\text{dustTT}}$	81.5	$81.6 \pm 7.4$	$z_*$	1090.568	$1090.58 \pm 0.30$	$\chi_{6\text{DF}}^2$	0.0075	$0.047 \pm 0.067$
$c_{100}$	0.99791	$0.99787 \pm 0.00078$	$r_*$	141.297	$141.33 \pm 0.30$	$\chi_{\text{MGS}}^2$	1.97	$2.08 \pm 0.60$
$c_{217}$	0.99621	$0.9962 \pm 0.0015$	$100\theta_*$	1.040334	$1.04035 \pm 0.00041$	$\chi_{\text{DR11CMass}}^2$	2.73	$3.18 \pm 0.94$
$H_0$	70.14	$70.17 \pm 0.56$	$D_A/\text{Gpc}$	13.5819	$13.585 \pm 0.029$	$\chi_{\text{DR11LOWZ}}^2$	0.130	$0.23 \pm 0.29$
$\Omega_\Lambda$	0.6996	$0.7000 \pm 0.0070$	$z_{\text{drag}}$	1060.810	$1060.79 \pm 0.44$	$\chi_{\text{prior}}^2$	2.50	$7.6 \pm 3.6$
$\Omega_m$	0.3004	$0.3000 \pm 0.0070$	$r_{\text{drag}}$	143.883	$143.92 \pm 0.32$	$\chi_{\text{CMB}}^2$	11272.5	$11286.5 \pm 5.5$
$\Omega_m h^2$	0.14780	$0.1477 \pm 0.0012$	$k_{\text{D}}$	0.142922	$0.14287 \pm 0.00043$	$\chi_{\text{BAO}}^2$	4.83	$5.5 \pm 1.4$
$\Omega_m h^3$	0.103660	$0.10363 \pm 0.00049$	$100\theta_{\text{D}}$	0.161842	$0.16187 \pm 0.00025$			

Best-fit  $\chi_{\text{eff}}^2 = 11986.36$ ;  $\bar{\chi}_{\text{eff}}^2 = 12006.31$ ;  $R - 1 = 0.02151$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.97 DR11CMass: 2.73 DR11LOWZ: 0.13 CMB - smica\_g30\_ftl\_full\_pp: 9.94 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.58 plik\_dx11dr2\_HM\_v18\_TT: 768.96 Hubble - H070p6: 0.02 SN - JLA December\_2013: 706.53

### 11.35 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022587	$0.02258 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.080$	$100\theta_*$	1.040114	$1.04013 \pm 0.00029$
$\Omega_c h^2$	0.12543	$0.1253 \pm 0.0011$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.5594	$13.562 \pm 0.023$
$100\theta_{\text{MC}}$	1.040205	$1.04022 \pm 0.00029$	$c_{100}$	0.99816	$0.99813 \pm 0.00078$	$z_{\text{drag}}$	1061.115	$1061.11 \pm 0.29$
$\tau$	0.0905	$0.090 \pm 0.016$	$c_{217}$	0.99612	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	143.578	$143.61 \pm 0.25$
$\ln(10^{10} A_s)$	3.1295	$3.128 \pm 0.032$	$H_0$	69.90	$69.94 \pm 0.50$	$k_D$	0.143342	$0.14330 \pm 0.00030$
$n_s$	0.97946	$0.9795 \pm 0.0041$	$\Omega_\Lambda$	0.6957	$0.6962 \pm 0.0064$	$100\theta_D$	0.161635	$0.16165 \pm 0.00017$
$y_{\text{cal}}$	1.00022	$1.0004 \pm 0.0024$	$\Omega_m$	0.3043	$0.3038 \pm 0.0064$	$z_{\text{eq}}$	3361.2	$3358 \pm 25$
$A_{217}^{\text{CIB}}$	68.5	$65.6 \pm 6.6$	$\Omega_m h^2$	0.14866	$0.1485 \pm 0.0011$	$k_{\text{eq}}$	0.010524	$0.010515 \pm 0.000077$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.103909	$0.10388 \pm 0.00031$	$100\theta_{\text{eq}}$	0.82103	$0.8216 \pm 0.0047$
$A_{143}^{\text{tSZ}}$	7.14	$5.1 \pm 1.9$	$\sigma_8$	0.8563	$0.855 \pm 0.014$	$100\theta_{\text{s,eq}}$	0.45325	$0.4535 \pm 0.0024$
$A_{100}^{\text{PS}}$	261.6	$267 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4723	$0.4713 \pm 0.0088$	$r_{\text{drag}}/D_V(0.57)$	0.071878	$0.07192 \pm 0.00037$
$A_{143}^{\text{PS}}$	42.1	$46 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6360	$0.635 \pm 0.010$	$H(0.57)$	95.677	$95.69 \pm 0.23$
$A_{143 \times 217}^{\text{PS}}$	34.9	$40_{-10}^{+10}$	$\sigma_8/h^{0.5}$	1.0242	$1.023 \pm 0.016$	$D_A(0.57)$	1345.5	$1345.1 \pm 6.4$
$A_{217}^{\text{PS}}$	97.9	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5072	$2.504 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67420	$0.6741 \pm 0.0017$
$A^{\text{kSZ}}$	0.00	$< 5.04$	$z_{\text{re}}$	11.18	$11.1_{-1.3}^{+1.6}$	$f\sigma_8(0.57)$	0.4958	$0.4951 \pm 0.0080$
$A_{100}^{\text{dust}TT}$	7.56	$7.6 \pm 1.9$	$10^9 A_s$	2.286	$2.283 \pm 0.073$	$\sigma_8(0.57)$	0.6388	$0.638 \pm 0.010$
$A_{143}^{\text{dust}TT}$	9.10	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.9078	$1.907 \pm 0.011$	$f_{2000}^{143}$	31.29	$31.6 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.76	$17.2 \pm 4.2$	$D_{40}$	1225.7	$1226 \pm 13$	$f_{2000}^{143 \times 217}$	33.80	$33.9 \pm 1.9$
$A_{217}^{\text{dust}TT}$	81.8	$81.5 \pm 7.5$	$D_{220}$	5725.5	$5726 \pm 39$	$f_{2000}^{217}$	107.20	$107.3 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0818	$0.0819 \pm 0.0057$	$D_{810}$	2540.3	$2540 \pm 13$	$\chi_{\text{lowTEB}}^2$	10496.13	$10496.6 \pm 2.4$
$A_{100 \times 143}^{\text{dust}EE}$	0.04953	$0.0496 \pm 0.0050$	$D_{1420}$	813.01	$813.0 \pm 4.6$	$\chi_{\text{plik}}^2$	2437.3	$2455.7 \pm 6.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0985	$0.099 \pm 0.033$	$D_{2000}$	228.81	$228.8 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0009	$0.030 \pm 0.042$
$A_{143}^{\text{dust}EE}$	0.1010	$0.1010 \pm 0.0069$	$n_{\text{s},0.002}$	0.97946	$0.9795 \pm 0.0041$	$\chi_{\text{MGS}}^2$	1.61	$1.72 \pm 0.52$
$A_{143 \times 217}^{\text{dust}EE}$	0.2211	$0.221 \pm 0.047$	$Y_{\text{P}}$	0.250640	$0.250638 \pm 0.000061$	$\chi_{\text{DR11CMass}}^2$	2.476	$2.83 \pm 0.51$
$A_{217}^{\text{dust}EE}$	0.645	$0.64 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.251986	$0.251983 \pm 0.000061$	$\chi_{\text{DR11LOWZ}}^2$	0.332	$0.40 \pm 0.38$
$A_{100}^{\text{dust}TE}$	0.1408	$0.140 \pm 0.038$	$10^5 \text{D}/\text{H}$	2.6837	$2.685 \pm 0.027$	$\chi_{\text{prior}}^2$	7.3	$19.9 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.132 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.4284	$13.428 \pm 0.021$	$\chi_{\text{CMB}}^2$	12933.5	$12952.3 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.084$	$z_*$	1090.494	$1090.49 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.417	$4.98 \pm 0.78$
$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$r_*$	141.033	$141.07 \pm 0.24$			

Best-fit  $\chi_{\text{eff}}^2 = 12945.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 12977.16$ ;  $R - 1 = 0.00677$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.48 DR11LOWZ: 0.33 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.12 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2437.34

### 11.36 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022590	$0.02257^{+0.00013}_{-0.00015}$	$A_{217}^{\text{dust}TE}$	1.668	$1.67 \pm 0.25$	$z_{\text{drag}}$	1061.077	$1061.06^{+0.27}_{-0.32}$
$\Omega_c h^2$	0.12483	$0.1248 \pm 0.0011$	$c_{100}$	0.99811	$0.99805 \pm 0.00077$	$r_{\text{drag}}$	143.723	$143.74 \pm 0.24$
$100\theta_{\text{MC}}$	1.040297	$1.04027 \pm 0.00028$	$c_{217}$	0.99634	$0.9962 \pm 0.0014$	$k_D$	0.143184	$0.14316 \pm 0.00030$
$\tau$	0.0684	$0.068 \pm 0.012$	$H_0$	70.141	$70.11 \pm 0.48$	$100\theta_D$	0.161664	$0.16168 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0826	$3.082 \pm 0.023$	$\Omega_\Lambda$	0.6990	$0.6987 \pm 0.0061$	$z_{\text{eq}}$	3347.6	$3348 \pm 23$
$n_s$	0.98007	$0.9798 \pm 0.0040$	$\Omega_m$	0.3010	$0.3013 \pm 0.0061$	$k_{\text{eq}}$	0.010481	$0.010481 \pm 0.000073$
$y_{\text{cal}}$	0.99989	$1.0001 \pm 0.0026$	$\Omega_m h^2$	0.14807	$0.1481 \pm 0.0010$	$100\theta_{\text{eq}}$	0.82361	$0.8236 \pm 0.0045$
$A_{217}^{\text{CIB}}$	69.7	$66.6 \pm 6.4$	$\Omega_m h^3$	0.103855	$0.10381 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45459	$0.4546 \pm 0.0023$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.612$	$\sigma_8$	0.8347	$0.8347 \pm 0.0087$	$r_{\text{drag}}/D_V(0.57)$	0.072079	$0.07207 \pm 0.00036$
$A_{143}^{\text{tSZ}}$	6.87	$4.9 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4579	$0.4581 \pm 0.0060$	$H(0.57)$	95.768	$95.75 \pm 0.22$
$A_{100}^{\text{PS}}$	265.3	$270 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6183	$0.6184 \pm 0.0066$	$D_A(0.57)$	1342.6	$1343.0 \pm 6.1$
$A_{143}^{\text{PS}}$	42.6	$47 \pm 8$	$\sigma_8/h^{0.5}$	0.9967	$0.997 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67334	$0.6734 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	33.8	$39^{+9}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4418	$2.442^{+0.028}_{-0.023}$	$f\sigma_8(0.57)$	0.48245	$0.4825 \pm 0.0050$
$A_{217}^{\text{PS}}$	95.2	$95 \pm 10$	$z_{\text{re}}$	9.15	$9.1 \pm 1.2$	$\sigma_8(0.57)$	0.6236	$0.6235 \pm 0.0070$
$A^{\text{kSZ}}$	0.99	$< 5.87$	$10^9 A_s$	2.182	$2.182 \pm 0.050$	$f_{2000}^{143}$	32.30	$32.7 \pm 2.6$
$A_{100}^{\text{dust}TT}$	7.58	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.9027	$1.903 \pm 0.011$	$f_{2000}^{143 \times 217}$	34.58	$34.7 \pm 1.7$
$A_{143}^{\text{dust}TT}$	9.28	$9.3 \pm 1.9$	$D_{40}$	1213.1	$1214 \pm 12$	$f_{2000}^{217}$	107.78	$107.9 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	18.18	$17.5 \pm 4.2$	$D_{220}$	5720.7	$5722^{+44}_{-37}$	$\chi_{\text{lensing}}^2$	10.57	$11.2 \pm 2.1$
$A_{217}^{\text{dust}TT}$	82.0	$81.4 \pm 7.4$	$D_{810}$	2538.1	$2538^{+14}_{-13}$	$\chi_{\text{lowTEB}}^2$	10493.68	$10494.07 \pm 0.85$
$A_{100}^{\text{dust}EE}$	0.0821	$0.0822 \pm 0.0057$	$D_{1420}$	812.75	$812.7^{+5.0}_{-4.4}$	$\chi_{\text{plik}}^2$	2441.6	$2459.4 \pm 6.6$
$A_{100 \times 143}^{\text{dust}EE}$	0.04993	$0.0498 \pm 0.0049$	$D_{2000}$	228.19	$228.1^{+1.6}_{-1.4}$	$\chi_{\text{H070p6}}^2$	0.0190	$0.042 \pm 0.050$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.098 \pm 0.033$	$n_{s,0.002}$	0.98007	$0.9798 \pm 0.0040$	$\chi_{\text{JLA}}^2$	706.533	$706.568 \pm 0.089$
$A_{143}^{\text{dust}EE}$	0.1012	$0.1012^{+0.0067}_{-0.0075}$	$Y_P$	0.250642	$0.250635^{+0.000058}_{-0.000065}$	$\chi_{6\text{DF}}^2$	0.0041	$0.031 \pm 0.042$
$A_{143 \times 217}^{\text{dust}EE}$	0.2208	$0.221 \pm 0.047$	$Y_P^{\text{BBN}}$	0.251987	$0.251980^{+0.000058}_{-0.000065}$	$\chi_{\text{MGS}}^2$	1.89	$1.93 \pm 0.52$
$A_{217}^{\text{dust}EE}$	0.645	$0.64 \pm 0.13$	$10^5 D/H$	2.6831	$2.686 \pm 0.026$	$\chi_{\text{DR11CMass}}^2$	2.657	$2.94 \pm 0.62$
$A_{100}^{\text{dust}TE}$	0.1420	$0.139 \pm 0.038$	Age/Gyr	13.4228	$13.425 \pm 0.020$	$\chi_{\text{DR11LOWZ}}^2$	0.164	$0.27 \pm 0.29$
$A_{100 \times 143}^{\text{dust}TE}$	0.1312	$0.134 \pm 0.030$	$z_*$	1090.437	$1090.46 \pm 0.23$	$\chi_{\text{prior}}^2$	7.8	$20 \pm 6$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.082$	$r_*$	141.176	$141.18^{+0.22}_{-0.26}$	$\chi_{\text{CMB}}^2$	12945.9	$12964.7 \pm 6.5$
$A_{143}^{\text{dust}TE}$	0.155	$0.158^{+0.050}_{-0.059}$	$100\theta_*$	1.040212	$1.04018 \pm 0.00028$	$\chi_{\text{BAO}}^2$	4.72	$5.17 \pm 0.96$
$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.335 \pm 0.083$	$D_A/\text{Gpc}$	13.5719	$13.573 \pm 0.022$			

Best-fit  $\chi_{\text{eff}}^2 = 13664.99$ ;  $\bar{\chi}_{\text{eff}}^2 = 13696.86$ ;  $R - 1 = 0.04442$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.89 DR11CMass: 2.66 DR11LOWZ: 0.16 CMB - smica\_g30\_ftl\_full\_pp: 10.57 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.68

## 11.37 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022596	$0.02260 \pm 0.00020$	$\Omega_m h^3$	0.107434	$0.10744 \pm 0.00050$	$k_D$	0.144315	$0.14432 \pm 0.00044$
$\Omega_c h^2$	0.12804	$0.1280 \pm 0.0013$	$\sigma_8$	0.8606	$0.861 \pm 0.016$	$100\theta_D$	0.162183	$0.16218 \pm 0.00026$
$100\theta_{MC}$	1.040103	$1.04011 \pm 0.00042$	$\sigma_8 \Omega_m^{0.5}$	0.4713	$0.471 \pm 0.010$	$z_{eq}$	3343.7	$3343 \pm 29$
$\tau$	0.0869	$0.087 \pm 0.018$	$\sigma_8 \Omega_m^{0.25}$	0.6369	$0.637 \pm 0.012$	$k_{eq}$	0.010589	$0.010588 \pm 0.000091$
$\ln(10^{10} A_s)$	3.1274	$3.127 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0212	$1.021 \pm 0.019$	$100\theta_{eq}$	0.8243	$0.8245 \pm 0.0055$
$n_s$	0.98533	$0.9856 \pm 0.0045$	$\langle d^2 \rangle^{1/2}$	2.4878	$2.487 \pm 0.044$	$100\theta_{s,eq}$	0.45496	$0.4550 \pm 0.0028$
$y_{cal}$	1.00031	$1.0004 \pm 0.0025$	$z_{re}$	10.94	$10.9^{+1.8}_{-1.5}$	$r_{drag}/D_V(0.57)$	0.072121	$0.07213 \pm 0.00043$
$A_{217}^{CIB}$	69.4	$66.7 \pm 6.6$	$10^9 A_s$	2.282	$2.283 \pm 0.083$	$H(0.57)$	96.889	$96.90 \pm 0.30$
$\xi^{tSZ \times CIB}$	0.003	$< 0.606$	$10^9 A_s e^{-2\tau}$	1.9178	$1.918 \pm 0.012$	$D_A(0.57)$	1326.5	$1326.3 \pm 7.5$
$A_{143}^{tSZ}$	5.54	$4.4 \pm 2.0$	$D_{40}$	1215.5	$1216 \pm 13$	$F_{AP}(0.57)$	0.67307	$0.6730 \pm 0.0019$
$A_{100}^{PS}$	270.3	$271 \pm 28$	$D_{220}$	5713.3	$5715 \pm 40$	$f\sigma_8(0.57)$	0.4971	$0.4970 \pm 0.0093$
$A_{143}^{PS}$	45.2	$50 \pm 8$	$D_{810}$	2541.4	$2542 \pm 14$	$\sigma_8(0.57)$	0.6432	$0.643 \pm 0.012$
$A_{143 \times 217}^{PS}$	32.9	$40^{+9}_{-10}$	$D_{1420}$	811.12	$811.5 \pm 5.0$	$f_{2000}^{143}$	33.90	$33.8 \pm 2.9$
$A_{217}^{PS}$	94.6	$96 \pm 10$	$D_{2000}$	227.30	$227.4 \pm 1.8$	$f_{2000}^{143 \times 217}$	35.59	$35.5 \pm 2.1$
$A^{kSZ}$	2.82	$4.7^{+2.2}_{-4.0}$	$n_{s,0.002}$	0.98533	$0.9856 \pm 0.0045$	$f_{2000}^{217}$	108.87	$108.8 \pm 2.0$
$A_{100}^{dustTT}$	7.49	$7.6 \pm 1.9$	$Y_P$	0.252920	$0.252923 \pm 0.000089$	$\chi_{lowTEB}^2$	10494.71	$10495.4 \pm 2.4$
$A_{143}^{dustTT}$	9.07	$9.1 \pm 1.8$	$Y_P^{BBN}$	0.254273	$0.254276 \pm 0.000089$	$\chi_{plik}^2$	769.0	$782.1 \pm 5.8$
$A_{143 \times 217}^{dustTT}$	17.22	$17.3 \pm 4.2$	$10^5 D/H$	2.7432	$2.742 \pm 0.039$	$\chi_{6DF}^2$	0.0075	$0.049 \pm 0.069$
$A_{217}^{dustTT}$	81.3	$81.5 \pm 7.4$	Age/Gyr	13.2696	$13.269 \pm 0.028$	$\chi_{MGS}^2$	1.97	$2.05 \pm 0.63$
$c_{100}$	0.99789	$0.99789 \pm 0.00078$	$z_*$	1090.874	$1090.86 \pm 0.32$	$\chi_{DR11CMass}^2$	2.73	$3.19 \pm 0.95$
$c_{217}$	0.99626	$0.9962 \pm 0.0015$	$r_*$	139.582	$139.58 \pm 0.30$	$\chi_{DR11LOWZ}^2$	0.134	$0.26 \pm 0.32$
$H_0$	71.02	$71.04 \pm 0.60$	$100\theta_*$	1.039910	$1.03991 \pm 0.00041$	$\chi_{prior}^2$	2.43	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.7001	$0.7002 \pm 0.0074$	$D_A/Gpc$	13.4225	$13.423 \pm 0.029$	$\chi_{CMB}^2$	11263.7	$11277.6 \pm 5.5$
$\Omega_m$	0.2999	$0.2998 \pm 0.0074$	$z_{drag}$	1061.459	$1061.48 \pm 0.44$	$\chi_{BAO}^2$	4.84	$5.6 \pm 1.5$
$\Omega_m h^2$	0.15128	$0.1513 \pm 0.0013$	$r_{drag}$	142.105	$142.10 \pm 0.32$			

Best-fit  $\chi_{eff}^2 = 11270.95$ ;  $\bar{\chi}_{eff}^2 = 11290.61$ ;  $R - 1 = 0.00564$  $\chi_{eff}^2$ : BAO - 6DF: 0.01 MGS: 1.97 DR11CMass: 2.73 DR11LOWZ: 0.13 CMB - lowL.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.71 plik\_dx11dr2\_HM\_v18.TT: 768.98

### 11.38 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022551	$0.02257^{+0.00018}_{-0.00021}$	$\sigma_8$	0.8401	$0.8406 \pm 0.0094$	$z_{\text{eq}}$	3330.3	$3330 \pm 27$
$\Omega_c h^2$	0.12747	$0.1274 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4582	$0.4581 \pm 0.0066$	$k_{\text{eq}}$	0.010546	$0.010545 \pm 0.000086$
$100\theta_{\text{MC}}$	1.040107	$1.04015 \pm 0.00040$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.6205 \pm 0.0071$	$100\theta_{\text{eq}}$	0.8267	$0.8269 \pm 0.0052$
$\tau$	0.0663	$0.066 \pm 0.013$	$\sigma_8/h^{0.5}$	0.9958	$0.996 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45622	$0.4563 \pm 0.0027$
$\ln(10^{10} A_s)$	3.0833	$3.084 \pm 0.024$	$\langle d^2 \rangle^{1/2}$	2.4288	$2.428 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.072277	$0.07231 \pm 0.00041$
$n_s$	0.98516	$0.9857 \pm 0.0045$	$z_{\text{re}}$	9.03	$9.0^{+1.4}_{-1.2}$	$H(0.57)$	96.913	$96.95 \pm 0.29$
$y_{\text{cal}}$	0.99960	$1.0001 \pm 0.0025$	$10^9 A_s$	2.183	$2.186 \pm 0.053$	$D_A(0.57)$	1324.9	$1324.2 \pm 7.2$
$A_{217}^{\text{CIB}}$	70.1	$67.5^{+6.4}_{-7.3}$	$10^9 A_s e^{-2\tau}$	1.9121	$1.914 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67243	$0.6723 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.574$	$D_{40}$	1204.8	$1206 \pm 11$	$f\sigma_8(0.57)$	0.4845	$0.4847 \pm 0.0054$
$A_{143}^{\text{tSZ}}$	5.12	$4.2^{+2.1}_{-2.3}$	$D_{220}$	5705.0	$5711 \pm 40$	$\sigma_8(0.57)$	0.6285	$0.6290 \pm 0.0077$
$A_{100}^{\text{PS}}$	273.3	$275 \pm 28$	$D_{810}$	2536.9	$2540 \pm 14$	$f_{2000}^{143}$	35.02	$34.9 \pm 2.8$
$A_{143}^{\text{PS}}$	45.8	$51 \pm 8$	$D_{1420}$	809.6	$811.0 \pm 5.1$	$f_{2000}^{143 \times 217}$	36.48	$36.3^{+1.9}_{-2.2}$
$A_{143 \times 217}^{\text{PS}}$	31.9	$40^{+9}_{-10}$	$D_{2000}$	226.22	$226.7^{+1.7}_{-1.9}$	$f_{2000}^{217}$	109.61	$109.5 \pm 1.9$
$A_{217}^{\text{PS}}$	92.6	$95 \pm 10$	$n_{\text{s},0.002}$	0.98516	$0.9857 \pm 0.0045$	$\chi_{\text{lensing}}^2$	10.09	$10.8 \pm 1.8$
$A^{\text{kSZ}}$	4.1	—	$Y_{\text{P}}$	0.252900	$0.252909^{+0.000082}_{-0.000093}$	$\chi_{\text{lowTEB}}^2$	10493.06	$10493.42 \pm 0.80$
$A_{100}^{\text{dustTT}}$	7.62	$7.6 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.254253	$0.254262^{+0.000082}_{-0.000094}$	$\chi_{\text{plik}}^2$	771.5	$784.5 \pm 5.7$
$A_{143}^{\text{dustTT}}$	9.09	$9.2 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.7519	$2.748 \pm 0.038$	$\chi_{\text{H070p6}}^2$	0.0299	$0.064 \pm 0.079$
$A_{143 \times 217}^{\text{dustTT}}$	17.35	$17.7 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.2717	$13.268 \pm 0.027$	$\chi_{\text{JLA}}^2$	706.5024	$706.542 \pm 0.069$
$A_{217}^{\text{dustTT}}$	81.2	$81.9 \pm 7.3$	$z_*$	1090.884	$1090.86 \pm 0.31$	$\chi_{6\text{DF}}^2$	0.0250	$0.067 \pm 0.088$
$c_{100}$	0.99785	$0.99788 \pm 0.00080$	$r_*$	139.746	$139.74 \pm 0.28$	$\chi_{\text{MGS}}^2$	2.19	$2.30 \pm 0.63$
$c_{217}$	0.99641	$0.9964 \pm 0.0014$	$100\theta_*$	1.039915	$1.03996^{+0.00039}_{-0.00044}$	$\chi_{\text{DR11CMass}}^2$	3.03	$3.5 \pm 1.2$
$H_0$	71.17	$71.22 \pm 0.58$	$D_A/\text{Gpc}$	13.4382	$13.437 \pm 0.028$	$\chi_{\text{DR11LOWZ}}^2$	0.056	$0.17 \pm 0.23$
$\Omega_\Lambda$	0.7026	$0.7029 \pm 0.0070$	$z_{\text{drag}}$	1061.344	$1061.37 \pm 0.43$	$\chi_{\text{prior}}^2$	2.97	$7.7 \pm 3.7$
$\Omega_m$	0.2974	$0.2971 \pm 0.0070$	$r_{\text{drag}}$	142.285	$142.27 \pm 0.31$	$\chi_{\text{CMB}}^2$	11274.6	$11288.8 \pm 5.7$
$\Omega_m h^2$	0.15067	$0.1507 \pm 0.0012$	$k_{\text{D}}$	0.144076	$0.14410 \pm 0.00042$	$\chi_{\text{BAO}}^2$	5.31	$6.0 \pm 1.8$
$\Omega_m h^3$	0.107238	$0.10730 \pm 0.00049$	$100\theta_{\text{D}}$	0.162262	$0.16224^{+0.00027}_{-0.00023}$			

Best-fit  $\chi_{\text{eff}}^2 = 11989.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 12009.13$ ;  $R - 1 = 0.02505$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 2.19 DR11CMass: 3.03 DR11LOWZ: 0.06 CMB - smica\_g30\_ftl\_full\_pp: 10.09 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.06  
plik\_dx11dr2\_HM\_v18\_TT: 771.46 Hubble - H070p6: 0.03 SN - JLA December\_2013: 706.50

### 11.39 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup57\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022708	$0.02271 \pm 0.00014$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.336 \pm 0.081$	$100\theta_*$	1.039730	$1.03973 \pm 0.00030$
$\Omega_c h^2$	0.12815	$0.1282 \pm 0.0012$	$A_{217}^{\text{dust}TE}$	1.670	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.4146	$13.415 \pm 0.023$
$100\theta_{\text{MC}}$	1.039940	$1.03994 \pm 0.00030$	$c_{100}$	0.99813	$0.99811 \pm 0.00077$	$z_{\text{drag}}$	1061.726	$1061.73 \pm 0.30$
$\tau$	0.0919	$0.092 \pm 0.016$	$c_{217}$	0.99623	$0.9962 \pm 0.0014$	$r_{\text{drag}}$	141.960	$141.96 \pm 0.25$
$\ln(10^{10} A_s)$	3.1382	$3.139 \pm 0.032$	$H_0$	71.02	$71.02 \pm 0.51$	$k_D$	0.144563	$0.14457 \pm 0.00031$
$n_s$	0.98549	$0.9853 \pm 0.0041$	$\Omega_\Lambda$	0.6996	$0.6995 \pm 0.0064$	$100\theta_D$	0.162000	$0.16200 \pm 0.00018$
$y_{\text{cal}}$	1.00028	$1.0004 \pm 0.0025$	$\Omega_m$	0.3004	$0.3005 \pm 0.0064$	$z_{\text{eq}}$	3348.7	$3349 \pm 24$
$A_{217}^{\text{CIB}}$	69.5	$66.4 \pm 6.6$	$\Omega_m h^2$	0.15150	$0.1515 \pm 0.0011$	$k_{\text{eq}}$	0.010604	$0.010605 \pm 0.000077$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.107592	$0.10759 \pm 0.00033$	$100\theta_{\text{eq}}$	0.82359	$0.8236 \pm 0.0047$
$A_{143}^{\text{tSZ}}$	6.79	$4.8 \pm 2.0$	$\sigma_8$	0.8650	$0.865 \pm 0.014$	$100\theta_{\text{s,eq}}$	0.45449	$0.4545 \pm 0.0024$
$A_{100}^{\text{PS}}$	265.8	$270 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4741	$0.4743 \pm 0.0089$	$r_{\text{drag}}/D_V(0.57)$	0.072064	$0.07206 \pm 0.00037$
$A_{143}^{\text{PS}}$	43.7	$48 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6404	$0.641 \pm 0.011$	$H(0.57)$	96.922	$96.92 \pm 0.24$
$A_{143 \times 217}^{\text{PS}}$	34.9	$40_{-10}^{+9}$	$\sigma_8/h^{0.5}$	1.0265	$1.027 \pm 0.016$	$D_A(0.57)$	1326.3	$1326.3 \pm 6.3$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5015	$2.503 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67319	$0.6732 \pm 0.0016$
$A^{\text{kSZ}}$	0.88	$< 5.66$	$z_{\text{re}}$	11.35	$11.3_{-1.3}^{+1.6}$	$f\sigma_8(0.57)$	0.4998	$0.4999 \pm 0.0080$
$A_{100}^{\text{dust}TT}$	7.62	$7.6 \pm 1.9$	$10^9 A_s$	2.306	$2.309 \pm 0.074$	$\sigma_8(0.57)$	0.6464	$0.647 \pm 0.010$
$A_{143}^{\text{dust}TT}$	9.19	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.9190	$1.919 \pm 0.011$	$f_{2000}^{143}$	32.57	$32.8 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.86	$17.4 \pm 4.2$	$D_{40}$	1218.7	$1220 \pm 13$	$f_{2000}^{143 \times 217}$	34.84	$34.8 \pm 1.9$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.4$	$D_{220}$	5723.3	$5726 \pm 39$	$f_{2000}^{217}$	108.11	$108.2 \pm 1.8$
$A_{100}^{\text{dust}EE}$	0.0822	$0.0821 \pm 0.0057$	$D_{810}$	2542.5	$2543 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.45	$10496.1 \pm 2.5$
$A_{100 \times 143}^{\text{dust}EE}$	0.04981	$0.0498 \pm 0.0050$	$D_{1420}$	812.01	$812.0 \pm 4.7$	$\chi_{\text{plik}}^2$	2442.3	$2460.7 \pm 7.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0980	$0.098 \pm 0.033$	$D_{2000}$	227.89	$227.9 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0042	$0.035 \pm 0.050$
$A_{143}^{\text{dust}EE}$	0.1012	$0.1012 \pm 0.0068$	$n_{\text{s},0.002}$	0.98549	$0.9853 \pm 0.0041$	$\chi_{\text{MGS}}^2$	1.89	$1.95 \pm 0.54$
$A_{143 \times 217}^{\text{dust}EE}$	0.2195	$0.219 \pm 0.047$	$Y_{\text{P}}$	0.252969	$0.252969 \pm 0.000063$	$\chi_{\text{DR11CMass}}^2$	2.662	$2.99 \pm 0.70$
$A_{217}^{\text{dust}EE}$	0.642	$0.64 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.254322	$0.254323 \pm 0.000063$	$\chi_{\text{DR11LOWZ}}^2$	0.168	$0.27 \pm 0.29$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	$10^5 D/H$	2.7217	$2.722 \pm 0.028$	$\chi_{\text{prior}}^2$	7.8	$20 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	Age/Gyr	13.2642	$13.264 \pm 0.021$	$\chi_{\text{CMB}}^2$	12937.7	$12956.8 \pm 6.8$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.301 \pm 0.085$	$z_*$	1090.739	$1090.74 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.73	$5.3 \pm 1.1$
$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$r_*$	139.476	$139.47 \pm 0.24$			

Best-fit  $\chi_{\text{eff}}^2 = 12950.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 12982.18$ ;  $R - 1 = 0.00793$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.89 DR11CMass: 2.66 DR11LOWZ: 0.17 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.45 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2442.26



# 11.40 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup57\_BAO\_post\_lensing\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022706	$0.02269 \pm 0.00014$	$A_{217}^{\text{dust}TE}$	1.663	$1.67 \pm 0.24$	$z_{\text{drag}}$	1061.687	$1061.66 \pm 0.29$
$\Omega_c h^2$	0.12752	$0.1277 \pm 0.0011$	$c_{100}$	0.99805	$0.99804 \pm 0.00078$	$r_{\text{drag}}$	142.113	$142.08 \pm 0.24$
$100\theta_{\text{MC}}$	1.040022	$1.04001 \pm 0.00029$	$c_{217}$	0.99640	$0.9964 \pm 0.0014$	$k_D$	0.144390	$0.14441 \pm 0.00030$
$\tau$	0.0691	$0.068 \pm 0.012$	$H_0$	71.265	$71.18 \pm 0.49$	$100\theta_D$	0.162035	$0.16205 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0900	$3.088 \pm 0.023$	$\Omega_\Lambda$	0.7029	$0.7018^{+0.0064}_{-0.0058}$	$z_{\text{eq}}$	3334.7	$3339 \pm 23$
$n_s$	0.98568	$0.9854 \pm 0.0039$	$\Omega_m$	0.2971	$0.2982 \pm 0.0061$	$k_{\text{eq}}$	0.010560	$0.010573 \pm 0.000074$
$y_{\text{cal}}$	1.00008	$0.9999 \pm 0.0023$	$\Omega_m h^2$	0.15087	$0.1511 \pm 0.0010$	$100\theta_{\text{eq}}$	0.82624	$0.8254 \pm 0.0045$
$A_{217}^{\text{CIB}}$	70.5	$67.9 \pm 6.5$	$\Omega_m h^3$	0.107516	$0.10751 \pm 0.00033$	$100\theta_{\text{s,eq}}$	0.45587	$0.4555 \pm 0.0023$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.577$	$\sigma_8$	0.8426	$0.8425 \pm 0.0088$	$r_{\text{drag}}/D_V(0.57)$	0.072268	$0.07220 \pm 0.00036$
$A_{143}^{\text{tSZ}}$	5.77	$4.6 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4592	$0.4601 \pm 0.0060$	$H(0.57)$	97.010	$96.97 \pm 0.23$
$A_{100}^{\text{PS}}$	272.8	$275^{+30}_{-27}$	$\sigma_8 \Omega_m^{0.25}$	0.6220	$0.6226 \pm 0.0066$	$D_A(0.57)$	1323.4	$1324.5 \pm 6.1$
$A_{143}^{\text{PS}}$	43.8	$49 \pm 8$	$\sigma_8/h^{0.5}$	0.9981	$0.999 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67233	$0.6726 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	31.7	$39^{+8}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4355	$2.436 \pm 0.024$	$f\sigma_8(0.57)$	0.48585	$0.4861 \pm 0.0050$
$A_{217}^{\text{PS}}$	92.2	$94 \pm 10$	$z_{\text{re}}$	9.26	$9.1 \pm 1.2$	$\sigma_8(0.57)$	0.6305	$0.6301 \pm 0.0071$
$A^{\text{kSZ}}$	3.16	$5.0 \pm 2.6$	$10^9 A_s$	2.1978	$2.195 \pm 0.050$	$f_{2000}^{143}$	33.92	$33.9 \pm 2.5$
$A_{100}^{\text{dust}TT}$	7.70	$7.8 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.9142	$1.915 \pm 0.011$	$f_{2000}^{143 \times 217}$	35.68	$35.7 \pm 1.7$
$A_{143}^{\text{dust}TT}$	9.34	$9.4 \pm 1.8$	$D_{40}$	1207.0	$1207 \pm 11$	$f_{2000}^{217}$	108.86	$108.8 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.63	$17.7 \pm 4.1$	$D_{220}$	5721.2	$5719 \pm 37$	$\chi_{\text{lensing}}^2$	10.82	$11.6 \pm 2.2$
$A_{217}^{\text{dust}TT}$	81.2	$81.5 \pm 7.3$	$D_{810}$	2540.3	$2540 \pm 13$	$\chi_{\text{lowTEB}}^2$	10493.13	$10493.51 \pm 0.73$
$A_{100}^{\text{dust}EE}$	0.0823	$0.0823 \pm 0.0059$	$D_{1420}$	811.54	$811.4 \pm 4.4$	$\chi_{\text{plik}}^2$	2446.7	$2464.7 \pm 6.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0500	$0.0502 \pm 0.0050$	$D_{2000}$	227.15	$227.1 \pm 1.4$	$\chi_{\text{H070p6}}^2$	0.0402	$0.052 \pm 0.060$
$A_{100 \times 217}^{\text{dust}EE}$	0.0980	$0.097 \pm 0.033$	$n_{\text{s},0.002}$	0.98568	$0.9854 \pm 0.0039$	$\chi_{\text{JLA}}^2$	706.5004	$706.539 \pm 0.062$
$A_{143}^{\text{dust}EE}$	0.1014	$0.1010 \pm 0.0068$	$Y_{\text{P}}$	0.252968	$0.252961 \pm 0.000062$	$\chi_{6\text{DF}}^2$	0.0253	$0.045 \pm 0.060$
$A_{143 \times 217}^{\text{dust}EE}$	0.2197	$0.219 \pm 0.046$	$Y_{\text{P}}^{\text{BBN}}$	0.254321	$0.254315 \pm 0.000062$	$\chi_{\text{MGS}}^2$	2.19	$2.15 \pm 0.54$
$A_{217}^{\text{dust}EE}$	0.642	$0.64 \pm 0.12$	$10^5 D/H$	2.7221	$2.725 \pm 0.027$	$\chi_{\text{DR11CMass}}^2$	3.03	$3.19 \pm 0.84$
$A_{100}^{\text{dust}TE}$	0.1414	$0.141 \pm 0.037$	$\text{Age/Gyr}$	13.2593	$13.262 \pm 0.020$	$\chi_{\text{DR11LOWZ}}^2$	0.057	$0.18 \pm 0.22$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132^{+0.028}_{-0.031}$	$z_*$	1090.689	$1090.73 \pm 0.24$	$\chi_{\text{prior}}^2$	8.4	$20 \pm 6$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.301 \pm 0.082$	$r_*$	139.625	$139.59 \pm 0.23$	$\chi_{\text{CMB}}^2$	12950.6	$12969.9 \pm 6.7$
$A_{143}^{\text{dust}TE}$	0.155	$0.156^{+0.057}_{-0.052}$	$100\theta_*$	1.039817	$1.03980 \pm 0.00028$	$\chi_{\text{BAO}}^2$	5.31	$5.6 \pm 1.3$
$A_{143 \times 217}^{\text{dust}TE}$	0.334	$0.336 \pm 0.078$	$D_A/\text{Gpc}$	13.4278	$13.425 \pm 0.022$			

Best-fit  $\chi_{\text{eff}}^2 = 13670.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 13702.08$ ;  $R - 1 = 0.08207$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 MGS: 2.19 DR11CMass: 3.03 DR11LOWZ: 0.06 CMB - smica\_g30.ftl.full.pp: 10.82 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.13

**11.41 base\_nnu\_plikHM\_TT\_lowTEB\_nnup39\_lensing**

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022610	$0.02263 \pm 0.00023$	$\Omega_m h^2$	0.14599	$0.1459 \pm 0.0020$	$z_{\text{drag}}$	1061.001	$1061.03 \pm 0.46$
$\Omega_c h^2$	0.12274	$0.1226 \pm 0.0021$	$\Omega_m h^3$	0.103682	$0.10371 \pm 0.00048$	$r_{\text{drag}}$	144.221	$144.24 \pm 0.44$
$100\theta_{\text{MC}}$	1.040643	$1.04068 \pm 0.00046$	$\sigma_8$	0.8370	$0.8363 \pm 0.0099$	$k_{\text{D}}$	0.142650	$0.14264 \pm 0.00049$
$\tau$	0.0802	$0.079 \pm 0.017$	$\sigma_8 \Omega_m^{0.5}$	0.4503	$0.4492 \pm 0.0087$	$100\theta_{\text{D}}$	0.161757	$0.16174 \pm 0.00026$
$\ln(10^{10} A_s)$	3.1007	$3.100 \pm 0.031$	$\sigma_8 \Omega_m^{0.25}$	0.6139	$0.6129 \pm 0.0076$	$z_{\text{eq}}$	3300.5	$3297 \pm 45$
$n_s$	0.9848	$0.9853 \pm 0.0062$	$\sigma_8/h^{0.5}$	0.9932	$0.992 \pm 0.011$	$k_{\text{eq}}$	0.010334	$0.01032 \pm 0.00014$
$y_{\text{cal}}$	0.99967	$1.0003 \pm 0.0024$	$\langle d^2 \rangle^{1/2}$	2.4336	$2.430 \pm 0.026$	$100\theta_{\text{eq}}$	0.8327	$0.8335 \pm 0.0091$
$A_{217}^{\text{CIB}}$	69.7	$66.1 \pm 6.7$	$z_{\text{re}}$	10.20	$10.1^{+1.6}_{-1.5}$	$100\theta_{\text{s,eq}}$	0.45933	$0.4597 \pm 0.0046$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.221	$2.222^{+0.066}_{-0.076}$	$r_{\text{drag}}/D_V(0.57)$	0.07280	$0.07287 \pm 0.00073$
$A_{143}^{\text{tSZ}}$	6.14	$4.7 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8922	$1.894 \pm 0.013$	$H(0.57)$	96.104	$96.16 \pm 0.45$
$A_{100}^{\text{PS}}$	264.4	$267 \pm 28$	$D_{40}$	1205.9	$1207 \pm 12$	$D_A(0.57)$	1331.9	$1331 \pm 12$
$A_{143}^{\text{PS}}$	42.4	$47 \pm 8$	$D_{220}$	5715.3	$5724 \pm 40$	$F_{\text{AP}}(0.57)$	0.67034	$0.6701 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	31.7	$39^{+9}_{-10}$	$D_{810}$	2533.5	$2537 \pm 13$	$f\sigma_8(0.57)$	0.4804	$0.4797 \pm 0.0055$
$A_{217}^{\text{PS}}$	93.8	$96 \pm 10$	$D_{1420}$	812.11	$813.5 \pm 4.9$	$\sigma_8(0.57)$	0.6283	$0.6281 \pm 0.0091$
$A^{\text{kSZ}}$	2.09	$4.5^{+1.7}_{-4.2}$	$D_{2000}$	228.12	$228.6 \pm 1.8$	$f_{2000}^{143}$	32.55	$32.5 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.58	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9848	$0.9853 \pm 0.0062$	$f_{2000}^{143 \times 217}$	34.47	$34.4 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.19	$9.1 \pm 1.9$	$Y_{\text{P}}$	0.250650	$0.25066 \pm 0.00010$	$f_{2000}^{217}$	107.84	$107.8 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.14	$17.3 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.251996	$0.25201 \pm 0.00010$	$\chi^2_{\text{lensing}}$	9.48	$10.1 \pm 1.5$
$A_{217}^{\text{dustTT}}$	80.1	$81.5 \pm 7.4$	$10^5 \text{D}/\text{H}$	2.6793	$2.676 \pm 0.045$	$\chi^2_{\text{lowTEB}}$	10493.71	$10494.2 \pm 1.4$
$c_{100}$	0.99786	$0.99788 \pm 0.00078$	$\text{Age}/\text{Gyr}$	13.4017	$13.398 \pm 0.038$	$\chi^2_{\text{plik}}$	768.4	$782.0 \pm 5.5$
$c_{217}$	0.99616	$0.9962 \pm 0.0015$	$z_*$	1090.233	$1090.20 \pm 0.43$	$\chi^2_{\text{prior}}$	2.58	$7.5 \pm 3.6$
$H_0$	71.02	$71.11 \pm 0.98$	$r_*$	141.672	$141.70 \pm 0.44$	$\chi^2_{\text{CMB}}$	11271.6	$11286.3 \pm 5.5$
$\Omega_\Lambda$	0.7106	$0.711 \pm 0.012$	$100\theta_*$	1.040562	$1.04059 \pm 0.00045$			
$\Omega_{\text{m}}$	0.2894	$0.289 \pm 0.012$	$D_A/\text{Gpc}$	13.6149	$13.617 \pm 0.041$			

 Best-fit  $\chi^2_{\text{eff}} = 11274.19$ ;  $\bar{\chi}^2_{\text{eff}} = 11293.84$ ;  $R - 1 = 0.00691$ 
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.48 lowL.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.71 plik\_dx11dr2\_HM\_v18.TT: 768.42

### 11.42 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup39\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022623	$0.02261 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$z_*$	1090.346	$1090.37 \pm 0.30$
$\Omega_c h^2$	0.12424	$0.1243 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.336 \pm 0.080$	$r_*$	141.294	$141.28 \pm 0.31$
$100\theta_{\text{MC}}$	1.040351	$1.04033 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.647	$1.66 \pm 0.26$	$100\theta_*$	1.040261	$1.04025 \pm 0.00031$
$\tau$	0.0716	$0.071 \pm 0.014$	$c_{100}$	0.99812	$0.99808 \pm 0.00077$	$D_A/\text{Gpc}$	13.5826	$13.582 \pm 0.029$
$\ln(10^{10} A_s)$	3.0877	$3.087 \pm 0.026$	$c_{217}$	0.99623	$0.9962 \pm 0.0014$	$z_{\text{drag}}$	1061.115	$1061.11 \pm 0.31$
$n_s$	0.98168	$0.9810 \pm 0.0049$	$H_0$	70.39	$70.35 \pm 0.68$	$r_{\text{drag}}$	143.833	$143.82 \pm 0.30$
$y_{\text{cal}}$	0.99992	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.7023	$0.7017 \pm 0.0085$	$k_D$	0.143089	$0.14309 \pm 0.00033$
$A_{217}^{\text{CIB}}$	69.2	$66.6 \pm 6.6$	$\Omega_m$	0.2977	$0.2983 \pm 0.0085$	$100\theta_D$	0.161645	$0.16166 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14751	$0.1476 \pm 0.0014$	$z_{\text{eq}}$	3335.0	$3337 \pm 32$
$A_{143}^{\text{tSZ}}$	6.95	$4.9 \pm 2.0$	$\Omega_m h^3$	0.103839	$0.10382 \pm 0.00032$	$k_{\text{eq}}$	0.010442	$0.01045 \pm 0.00010$
$A_{100}^{\text{PS}}$	264.8	$269 \pm 28$	$\sigma_8$	0.8354	$0.8351 \pm 0.0092$	$100\theta_{\text{eq}}$	0.8261	$0.8258 \pm 0.0063$
$A_{143}^{\text{PS}}$	42.3	$47 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4558	$0.4560 \pm 0.0069$	$100\theta_{\text{s,eq}}$	0.45584	$0.4557 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	33.8	$39_{-10}^{+9}$	$\sigma_8 \Omega_m^{0.25}$	0.6170	$0.6171 \pm 0.0069$	$r_{\text{drag}}/D_V(0.57)$	0.07227	$0.07225 \pm 0.00050$
$A_{217}^{\text{PS}}$	95.8	$95 \pm 10$	$\sigma_8/h^{0.5}$	0.9956	$0.996 \pm 0.010$	$H(0.57)$	95.870	$95.85 \pm 0.31$
$A^{\text{kSZ}}$	0.81	$4.4_{-4.4}^{+1.4}$	$\langle d^2 \rangle^{1/2}$	2.4389	$2.440 \pm 0.025$	$D_A(0.57)$	1339.4	$1340.0 \pm 8.6$
$A_{100}^{\text{dust}TT}$	7.61	$7.6 \pm 1.9$	$z_{\text{re}}$	9.43	$9.3_{-1.2}^{+1.5}$	$F_{\text{AP}}(0.57)$	0.67249	$0.6726 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	9.35	$9.3 \pm 1.8$	$10^9 A_s$	2.193	$2.192 \pm 0.058$	$f\sigma_8(0.57)$	0.4819	$0.4818 \pm 0.0051$
$A_{143 \times 217}^{\text{dust}TT}$	18.26	$17.5 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.9002	$1.901 \pm 0.012$	$\sigma_8(0.57)$	0.6249	$0.6246 \pm 0.0079$
$A_{217}^{\text{dust}TT}$	82.2	$81.5 \pm 7.4$	$D_{40}$	1210.6	$1213 \pm 11$	$f_{2000}^{143}$	32.05	$32.4 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0823	$0.0822 \pm 0.0057$	$D_{220}$	5720.9	$5725 \pm 39$	$f_{2000}^{143 \times 217}$	34.33	$34.5 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.05010	$0.0500 \pm 0.0050$	$D_{810}$	2537.5	$2538 \pm 14$	$f_{2000}^{217}$	107.58	$107.8 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1017	$0.099 \pm 0.033$	$D_{1420}$	813.06	$813.0 \pm 4.8$	$\chi_{\text{lensing}}^2$	10.29	$11.0 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1016	$0.1013 \pm 0.0068$	$D_{2000}$	228.38	$228.3 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10493.57	$10494.15 \pm 0.98$
$A_{143 \times 217}^{\text{dust}EE}$	0.2267	$0.222 \pm 0.046$	$n_{\text{s},0.002}$	0.98168	$0.9810 \pm 0.0049$	$\chi_{\text{plik}}^2$	2442.1	$2460.3 \pm 6.9$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.250656	$0.250651 \pm 0.000071$	$\chi_{\text{prior}}^2$	7.7	$20 \pm 6$
$A_{100}^{\text{dust}TE}$	0.1413	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.252002	$0.251997 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12945.9	$12965.4 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1333	$0.132 \pm 0.029$	$10^5 D/H$	2.6768	$2.679 \pm 0.031$			
$A_{100 \times 217}^{\text{dust}TE}$	0.298	$0.302 \pm 0.084$	Age/Gyr	13.4156	$13.417 \pm 0.026$			

Best-fit  $\chi_{\text{eff}}^2 = 12953.61$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.61$ ;  $R - 1 = 0.00787$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.29 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.57 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2442.06

### 11.43 base\_nnu\_plikHM\_TT\_lowTEB\_nnup57\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022761	$0.02278 \pm 0.00024$	$\Omega_m h^2$	0.14828	$0.1479 \pm 0.0021$	$z_{\text{drag}}$	1061.611	$1061.63 \pm 0.47$
$\Omega_c h^2$	0.12487	$0.1245 \pm 0.0023$	$\Omega_m h^3$	0.10737	$0.10735 \pm 0.00050$	$r_{\text{drag}}$	142.695	$142.77 \pm 0.44$
$100\theta_{\text{MC}}$	1.040494	$1.04052 \pm 0.00047$	$\sigma_8$	0.8447	$0.846 \pm 0.010$	$k_{\text{D}}$	0.14378	$0.14371 \pm 0.00050$
$\tau$	0.0822	$0.085 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4492	$0.4485 \pm 0.0091$	$100\theta_{\text{D}}$	0.162111	$0.16211 \pm 0.00027$
$\ln(10^{10} A_s)$	3.1102	$3.116 \pm 0.032$	$\sigma_8 \Omega_m^{0.25}$	0.6160	$0.6160 \pm 0.0079$	$z_{\text{eq}}$	3277.1	$3270 \pm 47$
$n_s$	0.9926	$0.9930 \pm 0.0065$	$\sigma_8/h^{0.5}$	0.9927	$0.993 \pm 0.011$	$k_{\text{eq}}$	0.010378	$0.01035 \pm 0.00015$
$y_{\text{cal}}$	0.99988	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4200	$2.423 \pm 0.026$	$100\theta_{\text{eq}}$	0.8376	$0.8392 \pm 0.0096$
$A_{217}^{\text{CIB}}$	68.9	$66.8 \pm 6.7$	$z_{\text{re}}$	10.40	$10.6^{+1.6}_{-1.4}$	$100\theta_{\text{s,eq}}$	0.46175	$0.4626 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.030	$< 0.604$	$10^9 A_s$	2.243	$2.258 \pm 0.072$	$r_{\text{drag}}/D_V(0.57)$	0.07318	$0.07331 \pm 0.00078$
$A_{143}^{\text{tSZ}}$	6.22	$4.5 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.9027	$1.903 \pm 0.014$	$H(0.57)$	97.47	$97.55 \pm 0.50$
$A_{100}^{\text{PS}}$	264.3	$271 \pm 28$	$D_{40}$	1196.0	$1198 \pm 12$	$D_A(0.57)$	1309.8	$1308 \pm 13$
$A_{143}^{\text{PS}}$	44.6	$49 \pm 8$	$D_{220}$	5715.9	$5724 \pm 41$	$F_{\text{AP}}(0.57)$	0.66859	$0.6681 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	34.6	$39^{+9}_{-10}$	$D_{810}$	2537.8	$2539 \pm 14$	$f\sigma_8(0.57)$	0.4828	$0.4829 \pm 0.0057$
$A_{217}^{\text{PS}}$	96.2	$95 \pm 10$	$D_{1420}$	812.5	$812.7 \pm 5.0$	$\sigma_8(0.57)$	0.6359	$0.6374 \pm 0.0093$
$A^{\text{kSZ}}$	1.93	$4.8^{+2.8}_{-3.4}$	$D_{2000}$	227.65	$227.7 \pm 1.8$	$f_{2000}^{143}$	33.19	$33.6 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.62	$7.6 \pm 1.9$	$n_{\text{s},0.002}$	0.9926	$0.9930 \pm 0.0065$	$f_{2000}^{143 \times 217}$	35.19	$35.3 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.17	$9.2 \pm 1.8$	$Y_{\text{P}}$	0.252992	$0.25300 \pm 0.00011$	$f_{2000}^{217}$	108.46	$108.5 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.92	$17.5 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.254346	$0.25435 \pm 0.00011$	$\chi_{\text{lensing}}^2$	9.44	$10.2 \pm 1.5$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$10^5 D/H$	2.7116	$2.709 \pm 0.046$	$\chi_{\text{lowTEB}}^2$	10493.04	$10494.0 \pm 1.5$
$c_{100}$	0.99791	$0.99790 \pm 0.00078$	$\text{Age/Gyr}$	13.2292	$13.225 \pm 0.040$	$\chi_{\text{plik}}^2$	770.9	$783.7 \pm 5.6$
$c_{217}$	0.99621	$0.9963 \pm 0.0015$	$z_*$	1090.399	$1090.35 \pm 0.45$	$\chi_{\text{prior}}^2$	2.43	$7.6 \pm 3.7$
$H_0$	72.41	$72.6 \pm 1.1$	$r_*$	140.210	$140.28 \pm 0.45$	$\chi_{\text{CMB}}^2$	11273.3	$11287.9 \pm 5.6$
$\Omega_\Lambda$	0.7172	$0.719 \pm 0.012$	$100\theta_*$	1.040281	$1.04031 \pm 0.00046$			
$\Omega_m$	0.2828	$0.281 \pm 0.012$	$D_A/\text{Gpc}$	13.4781	$13.485 \pm 0.042$			

Best-fit  $\chi_{\text{eff}}^2 = 11275.77$ ;  $\bar{\chi}_{\text{eff}}^2 = 11295.46$ ;  $R - 1 = 0.00748$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.44 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10493.04 plik\_dx11dr2\_HM\_v18.TT: 770.85

#### 11.44 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnup57\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022774	$0.02277 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.157	$0.153 \pm 0.054$	$z_*$	1090.536	$1090.53 \pm 0.30$
$\Omega_c h^2$	0.12671	$0.1266 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.335 \pm 0.081$	$r_*$	139.764	$139.79 \pm 0.30$
$100\theta_{\text{MC}}$	1.040107	$1.04012 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.648	$1.66 \pm 0.26$	$100\theta_*$	1.039892	$1.03991 \pm 0.00031$
$\tau$	0.0742	$0.075 \pm 0.014$	$c_{100}$	0.99804	$0.99805 \pm 0.00077$	$D_A/\text{Gpc}$	13.4403	$13.443 \pm 0.028$
$\ln(10^{10} A_s)$	3.0985	$3.100 \pm 0.026$	$c_{217}$	0.99633	$0.9963 \pm 0.0014$	$z_{\text{drag}}$	1061.802	$1061.77 \pm 0.31$
$n_s$	0.98799	$0.9881 \pm 0.0049$	$H_0$	71.64	$71.68 \pm 0.69$	$r_{\text{drag}}$	142.232	$142.27 \pm 0.29$
$y_{\text{cal}}$	1.00019	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.7074	$0.7079 \pm 0.0083$	$k_D$	0.144308	$0.14427 \pm 0.00033$
$A_{217}^{\text{CIB}}$	70.3	$67.4 \pm 6.6$	$\Omega_m$	0.2926	$0.2921 \pm 0.0083$	$100\theta_D$	0.161977	$0.16199 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.595$	$\Omega_m h^2$	0.15013	$0.1500 \pm 0.0014$	$z_{\text{eq}}$	3318.3	$3316 \pm 32$
$A_{143}^{\text{tSZ}}$	5.88	$4.7 \pm 2.0$	$\Omega_m h^3$	0.107547	$0.10752 \pm 0.00033$	$k_{\text{eq}}$	0.010508	$0.01050 \pm 0.00010$
$A_{100}^{\text{PS}}$	266.8	$273 \pm 27$	$\sigma_8$	0.8441	$0.8443 \pm 0.0092$	$100\theta_{\text{eq}}$	0.8295	$0.8301 \pm 0.0063$
$A_{143}^{\text{PS}}$	41.7	$48 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4566	$0.4563 \pm 0.0069$	$100\theta_{s,\text{eq}}$	0.45754	$0.4578 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	30.8	$39_{-10}^{+9}$	$\sigma_8 \Omega_m^{0.25}$	0.6208	$0.6206 \pm 0.0069$	$r_{\text{drag}}/D_V(0.57)$	0.07254	$0.07258 \pm 0.00050$
$A_{217}^{\text{PS}}$	91.7	$94 \pm 10$	$\sigma_8/h^{0.5}$	0.9973	$0.997 \pm 0.010$	$H(0.57)$	97.173	$97.19 \pm 0.31$
$A^{\text{kSZ}}$	3.31	$4.9_{-3.3}^{+2.8}$	$\langle d^2 \rangle^{1/2}$	2.4331	$2.433 \pm 0.024$	$D_A(0.57)$	1318.9	$1318.4 \pm 8.4$
$A_{100}^{\text{dust}TT}$	7.95	$7.7 \pm 1.9$	$z_{\text{re}}$	9.71	$9.7_{-1.2}^{+1.4}$	$F_{\text{AP}}(0.57)$	0.67116	$0.6710 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	9.31	$9.4 \pm 1.8$	$10^9 A_s$	2.217	$2.220 \pm 0.057$	$f\sigma_8(0.57)$	0.4854	$0.4853 \pm 0.0051$
$A_{143 \times 217}^{\text{dust}TT}$	17.34	$17.6 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.9108	$1.911 \pm 0.012$	$\sigma_8(0.57)$	0.6328	$0.6331 \pm 0.0079$
$A_{217}^{\text{dust}TT}$	81.1	$81.5 \pm 7.4$	$D_{40}$	1203.9	$1205 \pm 11$	$f_{2000}^{143}$	33.23	$33.5 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0819	$0.0826 \pm 0.0057$	$D_{220}$	5723.4	$5724 \pm 39$	$f_{2000}^{143 \times 217}$	35.33	$35.3 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.05030	$0.0504 \pm 0.0050$	$D_{810}$	2539.9	$2540 \pm 14$	$f_{2000}^{217}$	108.62	$108.5 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0984	$0.099 \pm 0.033$	$D_{1420}$	812.25	$812.2 \pm 4.8$	$\chi_{\text{lensing}}^2$	10.56	$11.2 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1012	$0.1018 \pm 0.0069$	$D_{2000}$	227.55	$227.5 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10493.07	$10493.57 \pm 0.95$
$A_{143 \times 217}^{\text{dust}EE}$	0.2190	$0.219 \pm 0.046$	$n_{s,0.002}$	0.98799	$0.9881 \pm 0.0049$	$\chi_{\text{plik}}^2$	2446.8	$2465.1 \pm 7.1$
$A_{217}^{\text{dust}EE}$	0.630	$0.64 \pm 0.13$	$Y_P$	0.252998	$0.252996 \pm 0.000071$	$\chi_{\text{prior}}^2$	8.4	$21 \pm 6$
$A_{100}^{\text{dust}TE}$	0.1366	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.254352	$0.254350 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12950.4	$12970.0 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	0.1252	$0.132 \pm 0.029$	$10^5 D/H$	2.7089	$2.710 \pm 0.031$			
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.084$	Age/Gyr	13.2470	$13.246 \pm 0.026$			

Best-fit  $\chi_{\text{eff}}^2 = 12958.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 12990.67$ ;  $R - 1 = 0.00731$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.56 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.07 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2446.77

### 11.45 base\_nnu\_plikHM\_TT\_lowTEB\_nnu1\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.023209	$0.02318 \pm 0.00025$	$\Omega_m h^2$	0.15195	$0.1524 \pm 0.0022$	$z_{\text{drag}}$	1063.175	$1063.15 \pm 0.47$
$\Omega_c h^2$	0.12809	$0.1285 \pm 0.0023$	$\Omega_m h^3$	0.11627	$0.11629 \pm 0.00054$	$r_{\text{drag}}$	139.550	$139.48 \pm 0.42$
$100\theta_{\text{MC}}$	1.040273	$1.04025 \pm 0.00047$	$\sigma_8$	0.8713	$0.870 \pm 0.011$	$k_{\text{D}}$	0.146127	$0.14619 \pm 0.00049$
$\tau$	0.1066	$0.102 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4439	$0.4449 \pm 0.0088$	$100\theta_{\text{D}}$	0.162884	$0.16291 \pm 0.00027$
$\ln(10^{10} A_s)$	3.1650	$3.158 \pm 0.033$	$\sigma_8 \Omega_m^{0.25}$	0.6219	$0.6221 \pm 0.0079$	$z_{\text{eq}}$	3187.7	$3197 \pm 45$
$n_s$	1.0124	$1.0121 \pm 0.0065$	$\sigma_8/h^{0.5}$	0.9961	$0.996 \pm 0.012$	$k_{\text{eq}}$	0.010362	$0.01039 \pm 0.00015$
$y_{\text{cal}}$	0.99970	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4085	$2.406 \pm 0.026$	$100\theta_{\text{eq}}$	0.8566	$0.8549 \pm 0.0097$
$A_{217}^{\text{CIB}}$	71.4	$68.2 \pm 6.6$	$z_{\text{re}}$	12.50	$12.1^{+1.6}_{-1.4}$	$100\theta_{\text{s,eq}}$	0.47127	$0.4704 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.570$	$10^9 A_s$	2.369	$2.354 \pm 0.078$	$r_{\text{drag}}/D_V(0.57)$	0.07469	$0.07455 \pm 0.00080$
$A_{143}^{\text{tSZ}}$	4.53	$4.1^{+1.9}_{-2.3}$	$10^9 A_s e^{-2\tau}$	1.9139	$1.919 \pm 0.014$	$H(0.57)$	101.08	$101.01 \pm 0.54$
$A_{100}^{\text{PS}}$	278.3	$277 \pm 28$	$D_{40}$	1178.0	$1179 \pm 11$	$D_A(0.57)$	1251.1	$1253 \pm 12$
$A_{143}^{\text{PS}}$	46.1	$52 \pm 8$	$D_{220}$	5723.7	$5727 \pm 41$	$F_{\text{AP}}(0.57)$	0.66230	$0.6629 \pm 0.0030$
$A_{143 \times 217}^{\text{PS}}$	30.0	$40^{+8}_{-10}$	$D_{810}$	2537.4	$2542 \pm 14$	$f\sigma_8(0.57)$	0.4899	$0.4898 \pm 0.0058$
$A_{217}^{\text{PS}}$	89.3	$95 \pm 10$	$D_{1420}$	809.84	$811.4 \pm 5.0$	$\sigma_8(0.57)$	0.6627	$0.661 \pm 0.010$
$A^{\text{kSZ}}$	5.07	$5.5^{+4.3}_{-1.6}$	$D_{2000}$	225.86	$226.2 \pm 1.8$	$f_{2000}^{143}$	35.69	$35.5 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.72	$7.7 \pm 1.9$	$n_{\text{s},0.002}$	1.0124	$1.0121 \pm 0.0065$	$f_{2000}^{143 \times 217}$	36.90	$36.9 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.32	$9.2 \pm 1.8$	$Y_{\text{P}}$	0.258372	$0.25836 \pm 0.00011$	$f_{2000}^{217}$	110.02	$109.9 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.61	$17.6 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.259745	$0.25973 \pm 0.00011$	$\chi_{\text{lensing}}^2$	9.70	$10.5 \pm 1.5$
$A_{217}^{\text{dustTT}}$	81.5	$81.5 \pm 7.4$	$10^5 D/H$	2.7677	$2.773 \pm 0.047$	$\chi_{\text{lowTEB}}^2$	10494.33	$10494.3 \pm 2.3$
$c_{100}$	0.99783	$0.99791 \pm 0.00078$	Age/Gyr	12.8185	$12.823 \pm 0.039$	$\chi_{\text{plik}}^2$	773.9	$788.3 \pm 6.0$
$c_{217}$	0.99677	$0.9964 \pm 0.0014$	$z_*$	1090.505	$1090.58 \pm 0.45$	$\chi_{\text{prior}}^2$	3.36	$7.6 \pm 3.7$
$H_0$	76.52	$76.3 \pm 1.1$	$r_*$	137.240	$137.16 \pm 0.43$	$\chi_{\text{CMB}}^2$	11278.0	$11293.2 \pm 5.7$
$\Omega_{\Lambda}$	0.7405	$0.738 \pm 0.011$	$100\theta_*$	1.039773	$1.03975 \pm 0.00046$			
$\Omega_{\text{m}}$	0.2595	$0.262 \pm 0.011$	$D_{\text{A}}/\text{Gpc}$	13.1990	$13.191 \pm 0.040$			

Best-fit  $\chi_{\text{eff}}^2 = 11281.34$ ;  $\bar{\chi}_{\text{eff}}^2 = 11300.80$ ;  $R - 1 = 0.00923$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.70 lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.33 plik\_dx11dr2\_HM\_v18.TT: 773.95

# 11.46 base\_nnu\_plikHM\_TTTEEE\_lowTEB\_nnu1\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.023105	$0.02314 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.153 \pm 0.054$	$z_*$	1090.985	$1090.91 \pm 0.31$
$\Omega_c h^2$	0.13238	$0.1321 \pm 0.0016$	$A_{143 \times 217}^{\text{dust}TE}$	0.332	$0.333 \pm 0.081$	$r_*$	136.360	$136.40 \pm 0.29$
$100\theta_{\text{MC}}$	1.039604	$1.03967 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	1.650	$1.65 \pm 0.25$	$100\theta_*$	1.039112	$1.03917 \pm 0.00030$
$\tau$	0.0822	$0.085 \pm 0.015$	$c_{100}$	0.99802	$0.99800 \pm 0.00077$	$D_A/\text{Gpc}$	13.1227	$13.126 \pm 0.027$
$\ln(10^{10} A_s)$	3.1248	$3.131 \pm 0.026$	$c_{217}$	0.99661	$0.9965 \pm 0.0014$	$z_{\text{drag}}$	1063.251	$1063.30 \pm 0.31$
$n_s$	1.0028	$1.0046 \pm 0.0049$	$H_0$	74.65	$74.81 \pm 0.72$	$r_{\text{drag}}$	138.682	$138.72 \pm 0.29$
$y_{\text{cal}}$	0.99973	$1.0002 \pm 0.0025$	$\Omega_\Lambda$	0.7198	$0.7214 \pm 0.0080$	$k_D$	0.147060	$0.14705 \pm 0.00033$
$A_{217}^{\text{CIB}}$	71.6	$69.3 \pm 6.6$	$\Omega_m$	0.2802	$0.2786 \pm 0.0080$	$100\theta_D$	0.162792	$0.16276 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.000	$< 0.545$	$\Omega_m h^2$	0.15613	$0.1559 \pm 0.0015$	$z_{\text{eq}}$	3275.8	$3270 \pm 32$
$A_{143}^{\text{tSZ}}$	4.56	$4.3^{+2.0}_{-2.3}$	$\Omega_m h^3$	0.116544	$0.11659 \pm 0.00035$	$k_{\text{eq}}$	0.010648	$0.01063 \pm 0.00010$
$A_{100}^{\text{PS}}$	284.5	$280 \pm 28$	$\sigma_8$	0.8649	$0.8671 \pm 0.0096$	$100\theta_{\text{eq}}$	0.8384	$0.8398 \pm 0.0065$
$A_{143}^{\text{PS}}$	46.1	$51 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4578	$0.4576 \pm 0.0068$	$100\theta_{\text{s,eq}}$	0.46191	$0.4626 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	29.9	$39^{+8}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6293	$0.6299 \pm 0.0069$	$r_{\text{drag}}/D_V(0.57)$	0.07322	$0.07334 \pm 0.00052$
$A_{217}^{\text{PS}}$	88.9	$93 \pm 10$	$\sigma_8/h^{0.5}$	1.0011	$1.003 \pm 0.011$	$H(0.57)$	100.276	$100.36 \pm 0.34$
$A^{\text{kSZ}}$	5.77	$> 4.34$	$\langle d^2 \rangle^{1/2}$	2.4201	$2.421 \pm 0.024$	$D_A(0.57)$	1271.9	$1269.9 \pm 8.3$
$A_{100}^{\text{dust}TT}$	7.95	$7.9 \pm 1.9$	$z_{\text{re}}$	10.52	$10.7^{+1.4}_{-1.2}$	$F_{\text{AP}}(0.57)$	0.66790	$0.6675 \pm 0.0021$
$A_{143}^{\text{dust}TT}$	9.52	$9.5 \pm 1.8$	$10^9 A_s$	2.276	$2.291 \pm 0.060$	$f\sigma_8(0.57)$	0.4935	$0.4941 \pm 0.0052$
$A_{143 \times 217}^{\text{dust}TT}$	17.36	$17.9 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.9306	$1.932 \pm 0.012$	$\sigma_8(0.57)$	0.6518	$0.6540 \pm 0.0083$
$A_{217}^{\text{dust}TT}$	80.8	$81.5 \pm 7.4$	$D_{40}$	1187.1	$1186 \pm 11$	$f_{2000}^{143}$	36.40	$35.7 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0831	$0.0835 \pm 0.0056$	$D_{220}$	5719.2	$5723 \pm 39$	$f_{2000}^{143 \times 217}$	37.52	$37.1 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.05091	$0.0514 \pm 0.0050$	$D_{810}$	2541.0	$2544 \pm 14$	$f_{2000}^{217}$	110.53	$110.0 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1005	$0.098 \pm 0.033$	$D_{1420}$	808.84	$810.6 \pm 4.8$	$\chi_{\text{lensing}}^2$	11.34	$12.3 \pm 2.5$
$A_{143}^{\text{dust}EE}$	0.1024	$0.1028 \pm 0.0069$	$D_{2000}$	225.18	$225.9 \pm 1.6$	$\chi_{\text{lowTEB}}^2$	10492.41	$10492.9 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2154	$0.217 \pm 0.047$	$n_{\text{s},0.002}$	1.0028	$1.0046 \pm 0.0049$	$\chi_{\text{plik}}^2$	2462.5	$2480.6 \pm 7.4$
$A_{217}^{\text{dust}EE}$	0.665	$0.63 \pm 0.13$	$Y_{\text{P}}$	0.258326	$0.258342 \pm 0.000071$	$\chi_{\text{prior}}^2$	9.4	$22 \pm 6$
$A_{100}^{\text{dust}TE}$	0.1388	$0.141 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.259698	$0.259714 \pm 0.000071$	$\chi_{\text{CMB}}^2$	12966.2	$12985.8 \pm 7.1$
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.132 \pm 0.029$	$10^5 D/H$	2.7877	$2.781 \pm 0.031$			
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.301 \pm 0.084$	Age/Gyr	12.8659	$12.859 \pm 0.025$			

Best-fit  $\chi_{\text{eff}}^2 = 12975.67$ ;  $\bar{\chi}_{\text{eff}}^2 = 13007.41$ ;  $R - 1 = 0.00946$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 11.35 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.41 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2462.47

### 11.47 base\_nnu\_lensonly

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02230	$0.02230 \pm 0.00091$	$10^9 A_s$	2.252	$2.22^{+0.29}_{-0.39}$	$r_{\text{drag}}$	153.5	$138^{+12}_{-25}$
$\Omega_c h^2$	0.1092	$0.136^{+0.029}_{-0.038}$	$10^9 A_s e^{-2\tau}$	1.958	$1.93^{+0.26}_{-0.34}$	$k_D$	0.1367	$0.147^{+0.014}_{-0.012}$
$100\theta_{\text{MC}}$	1.075	$1.005^{+0.070}_{-0.098}$	$D_{40}$	1331	$1290^{+200}_{-300}$	$100\theta_D$	0.1640	$0.1604 \pm 0.0088$
$N_{\text{eff}}$	2.44	—	$D_{220}$	6072	$6047^{+1000}_{-1000}$	$z_{\text{eq}}$	3424	$3076^{+400}_{-700}$
$\ln(10^{10} A_s)$	3.115	$3.09 \pm 0.15$	$D_{810}$	2674	$2206^{+400}_{-500}$	$k_{\text{eq}}$	0.01001	$0.01027^{+0.00091}_{-0.0012}$
$n_s$	0.9621	$0.959 \pm 0.020$	$D_{1420}$	849	$710^{+100}_{-200}$	$100\theta_{\text{eq}}$	0.835	$0.860 \pm 0.075$
$H_0$	75.1	—	$D_{2000}$	249	$231^{+50}_{-70}$	$100\theta_{s,\text{eq}}$	0.4616	$0.472 \pm 0.038$
$\Omega_\Lambda$	0.765	$0.60^{+0.28}_{-0.10}$	$n_{s,0.002}$	0.9621	$0.959 \pm 0.020$	$r_{\text{drag}}/D_V(0.57)$	0.0795	$0.069^{+0.010}_{-0.018}$
$\Omega_m$	0.235	$0.40^{+0.10}_{-0.28}$	$Y_P$	0.2367	$0.262^{+0.037}_{-0.014}$	$H(0.57)$	97.1	$97^{+10}_{-20}$
$\Omega_m h^2$	0.1322	$0.159^{+0.029}_{-0.038}$	$Y_P^{\text{BBN}}$	0.2380	$0.263^{+0.037}_{-0.015}$	$D_A(0.57)$	1289	$1395^{+200}_{-400}$
$\Omega_m h^3$	0.0992	$0.110^{+0.028}_{-0.049}$	$10^5 \text{D/H}$	2.39	$3.3^{+1.2}_{-1.1}$	$F_{\text{AP}}(0.57)$	0.6553	$0.691^{+0.031}_{-0.062}$
$\sigma_8$	0.847	$0.78^{+0.13}_{-0.10}$	Age/Gyr	13.43	$13.5^{+1.4}_{-2.4}$	$f\sigma_8(0.57)$	0.4665	$0.446^{+0.039}_{-0.020}$
$\sigma_8 \Omega_m^{0.5}$	0.410	$0.459^{+0.062}_{-0.078}$	$z_*$	1088.4	$1092.9^{+6.2}_{-4.8}$	$\sigma_8(0.57)$	0.652	$0.57^{+0.13}_{-0.12}$
$\sigma_8 \Omega_m^{0.25}$	0.5894	$0.591 \pm 0.021$	$r_*$	150.7	$135^{+11}_{-25}$	$\chi^2_{\text{lensing}}$	8.41	$10.6 \pm 2.1$
$\sigma_8/h^{0.5}$	0.9776	$0.942^{+0.036}_{-0.053}$	$100\theta_*$	1.075	$1.004^{+0.070}_{-0.10}$	$\chi^2_{\text{prior}}$	0.01	$2.0 \pm 2.0$
$\langle d^2 \rangle^{1/2}$	2.451	$2.472 \pm 0.063$	$D_A/\text{Gpc}$	14.01	$13.4^{+1.2}_{-1.6}$			
$z_{\text{re}}$	8.99	$9.65 \pm 0.83$	$z_{\text{drag}}$	1058.48	$1062.1^{+5.3}_{-4.3}$			

Best-fit  $\chi^2_{\text{eff}} = 8.42$ ;  $\Delta\chi^2_{\text{eff}} = -0.03$ ;  $\bar{\chi}^2_{\text{eff}} = 12.65$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.13$ ;  $R - 1 = 0.00985$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.41 ( $\Delta -0.03$ )



## 11.48 base\_nnu\_lensonly\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02246	$0.02231 \pm 0.00091$	$10^9 A_s e^{-2\tau}$	1.845	$1.83^{+0.20}_{-0.27}$	$100\theta_D$	0.1599	$0.1622^{+0.0042}_{-0.0068}$
$\Omega_c h^2$	0.1140	$0.130^{+0.023}_{-0.047}$	$D_{40}$	1227	$1228^{+100}_{-200}$	$z_{\text{eq}}$	3385	$3402^{+500}_{-600}$
$100\theta_{\text{MC}}$	1.0418	$1.040 \pm 0.029$	$D_{220}$	5715	$5663^{+800}_{-1000}$	$k_{\text{eq}}$	0.01014	$0.01059^{+0.00089}_{-0.0013}$
$N_{\text{eff}}$	2.78	$< 5.01$	$D_{810}$	2522	$2403^{+300}_{-300}$	$100\theta_{\text{eq}}$	0.817	$0.823^{+0.067}_{-0.081}$
$\ln(10^{10} A_s)$	3.055	$3.04 \pm 0.13$	$D_{1420}$	817	$754^{+100}_{-200}$	$100\theta_{s,\text{eq}}$	0.4513	$0.454^{+0.035}_{-0.041}$
$n_s$	0.9623	$0.957 \pm 0.020$	$D_{2000}$	233	$219^{+50}_{-60}$	$r_{\text{drag}}/D_V(0.57)$	0.07177	$0.07181 \pm 0.00059$
$H_0$	66.6	$70^{+8}_{-10}$	$n_{s,0.002}$	0.9623	$0.957 \pm 0.020$	$H(0.57)$	91.5	$96.4^{+9.6}_{-18}$
$\Omega_\Lambda$	0.6912	$0.692^{+0.038}_{-0.033}$	$Y_P$	0.2417	$0.248^{+0.044}_{-0.025}$	$D_A(0.57)$	1409	$1361^{+200}_{-200}$
$\Omega_m$	0.3088	$0.308^{+0.033}_{-0.038}$	$Y_P^{\text{BBN}}$	0.2430	$0.250^{+0.044}_{-0.025}$	$F_{\text{AP}}(0.57)$	0.6753	$0.6749 \pm 0.0084$
$\Omega_m h^2$	0.1371	$0.153^{+0.023}_{-0.047}$	$10^5 D/H$	2.48	$2.88^{+0.61}_{-1.3}$	$f\sigma_8(0.57)$	0.4662	$0.468 \pm 0.016$
$\Omega_m h^3$	0.0914	$0.111^{+0.023}_{-0.056}$	Age/Gyr	14.03	$13.5 \pm 1.7$	$\sigma_8(0.57)$	0.5979	$0.603 \pm 0.028$
$\sigma_8$	0.8029	$0.808 \pm 0.031$	$z_*$	1089.0	$1091.3^{+4.0}_{-7.3}$	$\chi^2_{\text{lensing}}$	8.52	$10.7 \pm 2.1$
$\sigma_8 \Omega_m^{0.5}$	0.4461	$0.448 \pm 0.022$	$r_*$	147.3	$142 \pm 20$	$\chi^2_{6\text{DF}}$	0.011	$0.11 \pm 0.15$
$\sigma_8 \Omega_m^{0.25}$	0.5985	$0.601 \pm 0.021$	$100\theta_*$	1.0421	$1.040 \pm 0.030$	$\chi^2_{\text{MGS}}$	1.41	$1.61 \pm 0.86$
$\sigma_8/h^{0.5}$	0.983	$0.969^{+0.054}_{-0.046}$	$D_A/\text{Gpc}$	14.14	$13.7 \pm 1.6$	$\chi^2_{\text{DR11CMAS}}$	2.39	$3.3 \pm 1.4$
$\langle d^2 \rangle^{1/2}$	2.449	$2.444 \pm 0.056$	$z_{\text{drag}}$	1059.5	$1060.7^{+4.7}_{-5.6}$	$\chi^2_{\text{DR11LOWZ}}$	0.484	$0.64 \pm 0.68$
$z_{\text{re}}$	9.04	$9.44^{+0.77}_{-1.3}$	$r_{\text{drag}}$	150.0	$145^{+20}_{-20}$	$\chi^2_{\text{prior}}$	0.04	$2.1 \pm 2.1$
$10^9 A_s$	2.122	$2.11^{+0.24}_{-0.31}$	$k_D$	0.1390	$0.143^{+0.011}_{-0.017}$	$\chi^2_{\text{BAO}}$	4.29	$5.6 \pm 1.9$

Best-fit  $\chi^2_{\text{eff}} = 12.86$ ;  $\Delta\chi^2_{\text{eff}} = -0.07$ ;  $\bar{\chi}^2_{\text{eff}} = 18.35$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.37$ ;  $R - 1 = 0.00916$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  -0.07) DR11CMAS: 2.39 ( $\Delta$  -0.06) DR11LOWZ: 0.48 ( $\Delta$  0.05) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.52 ( $\Delta$  -0.03)

### 11.49 base\_nnu\_lensonly\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02228	$0.02229 \pm 0.00091$	$10^9 A_s$	2.231	$2.24^{+0.33}_{-0.36}$	$z_{\text{drag}}$	1058.87	$1061.6 \pm 4.2$
$\Omega_c h^2$	0.1105	$0.135^{+0.027}_{-0.041}$	$10^9 A_s e^{-2\tau}$	1.940	$1.95^{+0.28}_{-0.32}$	$r_{\text{drag}}$	150.9	$140^{+12}_{-23}$
$N_{\text{eff}}$	2.84	$4.4^{+2.8}_{-2.2}$	$D_{40}$	1304	$1318^{+200}_{-300}$	$k_D$	0.1377	$0.146 \pm 0.011$
$\ln(10^{10} A_s)$	3.105	$3.10^{+0.17}_{-0.14}$	$D_{220}$	6109	$6050^{+1000}_{-1000}$	$100\theta_D$	0.1604	$0.1647^{+0.0096}_{-0.0054}$
$n_s$	0.9619	$0.959 \pm 0.020$	$D_{810}$	2656	$2532^{+300}_{-400}$	$z_{\text{eq}}$	3264	$3227^{+250}_{-480}$
$H_0$	68.2	$> 70.1$	$D_{1420}$	855	$781^{+100}_{-200}$	$k_{\text{eq}}$	0.00982	$0.01052^{+0.00086}_{-0.0013}$
$\Omega_\Lambda$	0.713	$0.716^{+0.11}_{-0.038}$	$D_{2000}$	242.0	$213^{+40}_{-60}$	$100\theta_{\text{eq}}$	0.838	$0.855^{+0.089}_{-0.064}$
$\Omega_m$	0.287	$0.284^{+0.038}_{-0.11}$	$n_{s,0.002}$	0.9619	$0.959 \pm 0.020$	$100\theta_{s,\text{eq}}$	0.4625	$0.471^{+0.046}_{-0.033}$
$\Omega_m h^2$	0.1335	$0.158^{+0.027}_{-0.041}$	$Y_P$	0.2425	$0.257^{+0.034}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.0731	$0.0746^{+0.0066}_{-0.0049}$
$\Omega_m h^3$	0.091	$0.125^{+0.044}_{-0.057}$	$Y_P^{\text{BBN}}$	0.2438	$0.259^{+0.034}_{-0.014}$	$H(0.57)$	92.1	$102^{+20}_{-10}$
$\sigma_8$	0.808	$0.829^{+0.077}_{-0.036}$	$10^5 \text{D}/\text{H}$	2.54	$3.09 \pm 0.81$	$D_A(0.57)$	1388	$1280^{+110}_{-320}$
$\sigma_8 \Omega_m^{0.5}$	0.4323	$0.432^{+0.035}_{-0.048}$	Age/Gyr	13.99	$13.0^{+1.1}_{-2.6}$	$F_{\text{AP}}(0.57)$	0.6696	$0.667^{+0.012}_{-0.029}$
$\sigma_8 \Omega_m^{0.25}$	0.5909	$0.597 \pm 0.022$	$z_*$	1089.0	$1092.3 \pm 4.8$	$f\sigma_8(0.57)$	0.4629	$0.465^{+0.021}_{-0.018}$
$\sigma_8/h^{0.5}$	0.9777	$0.952^{+0.034}_{-0.053}$	$r_*$	148.1	$138^{+12}_{-22}$	$\sigma_8(0.57)$	0.607	$0.629^{+0.086}_{-0.040}$
$\langle d^2 \rangle^{1/2}$	2.468	$2.453 \pm 0.054$	$100\theta_*$	1.04114	$1.0402^{+0.0010}_{-0.0018}$	$\chi^2_{\text{lensing}}$	8.44	$10.6 \pm 2.1$
$z_{\text{re}}$	9.02	$9.64 \pm 0.91$	$D_A/\text{Gpc}$	14.23	$13.2^{+1.1}_{-2.1}$	$\chi^2_{\text{prior}}$	0.01	$2.0 \pm 2.0$

Best-fit  $\chi^2_{\text{eff}} = 8.45$ ;  $\Delta\chi^2_{\text{eff}} = 0.00$ ;  $\bar{\chi}^2_{\text{eff}} = 12.66$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.23$ ;  $R - 1 = 0.00899$   
 $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.44 ( $\Delta$  -0.00)

### 11.50 base\_nnu\_lensonly\_BAO\_theta

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02225	$0.02230 \pm 0.00092$	$D_{40}$	1259	$1213 \pm 93$	$z_{\text{eq}}$	3351	$3369 \pm 57$
$\Omega_c h^2$	0.1077	$0.131^{+0.021}_{-0.043}$	$D_{220}$	5903	$5564^{+600}_{-700}$	$k_{\text{eq}}$	0.00985	$0.01065^{+0.00088}_{-0.0015}$
$N_{\text{eff}}$	2.50	$3.7^{+1.1}_{-2.2}$	$D_{810}$	2610	$2419^{+300}_{-400}$	$100\theta_{\text{eq}}$	0.8216	$0.8196 \pm 0.0086$
$\ln(10^{10} A_s)$	3.074	$3.037 \pm 0.066$	$D_{1420}$	852	$769^{+100}_{-200}$	$100\theta_{\text{s,eq}}$	0.45380	$0.4528 \pm 0.0048$
$n_s$	0.9616	$0.957 \pm 0.020$	$D_{2000}$	244	$215^{+50}_{-60}$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07184 \pm 0.00052$
$H_0$	65.2	$70.4^{+5.8}_{-9.9}$	$n_{s,0.002}$	0.9616	$0.957 \pm 0.020$	$H(0.57)$	89.4	$96.5^{+7.7}_{-13}$
$\Omega_\Lambda$	0.6924	$0.6932 \pm 0.0095$	$Y_P$	0.2376	$0.250^{+0.019}_{-0.024}$	$D_A(0.57)$	1441	$1352^{+200}_{-100}$
$\Omega_m$	0.3076	$0.3068 \pm 0.0095$	$Y_P^{\text{BBN}}$	0.2389	$0.252^{+0.019}_{-0.024}$	$F_{\text{AP}}(0.57)$	0.67504	$0.6748 \pm 0.0024$
$\Omega_m h^2$	0.1306	$0.154^{+0.021}_{-0.043}$	$10^5 \text{D}/\text{H}$	2.42	$2.82^{+0.39}_{-0.77}$	$f\sigma_8(0.57)$	0.4620	$0.470 \pm 0.017$
$\Omega_m h^3$	0.0851	$0.111^{+0.019}_{-0.047}$	Age/Gyr	14.36	$13.5^{+1.6}_{-1.4}$	$\sigma_8(0.57)$	0.5932	$0.604 \pm 0.023$
$\sigma_8$	0.7961	$0.810 \pm 0.031$	$z_*$	1088.42	$1091.3^{+3.2}_{-5.6}$	$\chi^2_{\text{lensing}}$	8.43	$10.7 \pm 2.2$
$\sigma_8 \Omega_m^{0.5}$	0.4415	$0.449 \pm 0.016$	$r_*$	150.8	$141^{+20}_{-10}$	$\chi^2_{6\text{DF}}$	0.0064	$0.064 \pm 0.091$
$\sigma_8 \Omega_m^{0.25}$	0.5929	$0.603 \pm 0.022$	$100\theta_*$	1.04137	$1.0407^{+0.0013}_{-0.00083}$	$\chi^2_{\text{MGS}}$	1.47	$1.60 \pm 0.70$
$\sigma_8/h^{0.5}$	0.9862	$0.969^{+0.033}_{-0.025}$	$D_A/\text{Gpc}$	14.48	$13.6^{+1.6}_{-1.4}$	$\chi^2_{\text{DR11CMass}}$	2.40	$3.08 \pm 0.95$
$\langle d^2 \rangle^{1/2}$	2.464	$2.443 \pm 0.049$	$z_{\text{drag}}$	1058.29	$1060.8^{+3.9}_{-4.9}$	$\chi^2_{\text{DR11LOWZ}}$	0.429	$0.60 \pm 0.64$
$z_{\text{re}}$	8.92	$9.47^{+0.65}_{-1.1}$	$r_{\text{drag}}$	153.6	$144^{+20}_{-10}$	$\chi^2_{\text{prior}}$	0.01	$2.1 \pm 2.0$
$10^9 A_s$	2.164	$2.09^{+0.13}_{-0.16}$	$k_D$	0.1363	$0.1436^{+0.0090}_{-0.014}$	$\chi^2_{\text{BAO}}$	4.31	$5.3 \pm 1.4$
$10^9 A_s e^{-2\tau}$	1.881	$1.82^{+0.11}_{-0.14}$	$100\theta_D$	0.1592	$0.1625^{+0.0039}_{-0.0064}$			

Best-fit  $\chi^2_{\text{eff}} = 12.75$ ;  $\Delta\chi^2_{\text{eff}} = -0.19$ ;  $\bar{\chi}^2_{\text{eff}} = 18.13$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.17$ ;  $R - 1 = 0.00647$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.00) DR11CMass: 2.40 ( $\Delta$  -0.01) DR11LOWZ: 0.43 ( $\Delta$  -0.02) CMB - smica\_g30\_ftl\_full\_pp\_lensonly: 8.43 ( $\Delta$  -0.19)

### 11.51 base\_nnu\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022193	$0.02224 \pm 0.00033$	$\Omega_m$	0.3180	$0.315 \pm 0.019$	$D_A/\text{Gpc}$	13.915	$13.86 \pm 0.24$
$\Omega_c h^2$	0.11955	$0.1205 \pm 0.0040$	$\Omega_m h^2$	0.14239	$0.1434 \pm 0.0042$	$z_{\text{drag}}$	1059.47	$1059.7 \pm 1.2$
$100\theta_{\text{MC}}$	1.04089	$1.04081 \pm 0.00057$	$\Omega_m h^3$	0.0953	$0.0969^{+0.0056}_{-0.0063}$	$r_{\text{drag}}$	147.60	$146.9 \pm 2.7$
$\tau$	0.0727	$0.074^{+0.012}_{-0.014}$	$\sigma_8$	0.8251	$0.829 \pm 0.016$	$k_D$	0.14034	$0.1408 \pm 0.0019$
$N_{\text{eff}}$	3.008	$3.09 \pm 0.30$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.465 \pm 0.013$	$100\theta_D$	0.16087	$0.16107 \pm 0.00068$
$\ln(10^{10} A_s)$	3.0787	$3.084^{+0.028}_{-0.031}$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620 \pm 0.012$	$z_{\text{eq}}$	3405	$3392 \pm 66$
$n_s$	0.9635	$0.966 \pm 0.014$	$\sigma_8/h^{0.5}$	1.0087	$1.008 \pm 0.017$	$k_{\text{eq}}$	0.010365	$0.01038 \pm 0.00016$
$y_{\text{cal}}$	1.00026	$1.0004 \pm 0.0024$	$\langle d^2 \rangle^{1/2}$	2.4940	$2.490 \pm 0.046$	$100\theta_{\text{eq}}$	0.8123	$0.815 \pm 0.013$
$A_{217}^{\text{CIB}}$	66.7	$64.3 \pm 6.7$	$z_{\text{re}}$	9.50	$9.6 \pm 1.1$	$100\theta_{\text{s,eq}}$	0.4490	$0.4504 \pm 0.0064$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$10^9 A_s$	2.173	$2.185^{+0.059}_{-0.069}$	$r_{\text{drag}}/D_V(0.57)$	0.07123	$0.07144^{+0.00093}_{-0.0011}$
$A_{143}^{\text{tSZ}}$	7.05	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8791	$1.883 \pm 0.022$	$H(0.57)$	92.56	$93.2 \pm 2.3$
$A_{100}^{\text{PS}}$	253.7	$260 \pm 28$	$D_{40}$	1237.3	$1235 \pm 22$	$D_A(0.57)$	1398.1	$1388 \pm 42$
$A_{143}^{\text{PS}}$	39.3	$44 \pm 8$	$D_{220}$	5715.1	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67767	$0.6768 \pm 0.0047$
$A_{143 \times 217}^{\text{PS}}$	33.3	$39^{+10}_{-10}$	$D_{810}$	2534.3	$2535 \pm 14$	$f\sigma_8(0.57)$	0.4814	$0.4823 \pm 0.0089$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$D_{1420}$	815.0	$814.3 \pm 5.1$	$\sigma_8(0.57)$	0.6123	$0.616 \pm 0.014$
$A^{\text{kSZ}}$	0.02	$< 4.89$	$D_{2000}$	230.53	$230.0 \pm 2.3$	$f_{2000}^{143}$	29.51	$31 \pm 3$
$A_{100}^{\text{dustTT}}$	7.37	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9635	$0.966 \pm 0.014$	$f_{2000}^{143 \times 217}$	32.09	$32.8 \pm 2.6$
$A_{143}^{\text{dustTT}}$	8.91	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.24480	$0.2459 \pm 0.0041$	$f_{2000}^{217}$	105.74	$106.4 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.53	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24612	$0.2472 \pm 0.0041$	$\chi_{\text{WMAPTEB}}^2$	19734.46	$19735.5 \pm 2.8$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$10^5 D/H$	2.611	$2.631 \pm 0.070$	$\chi_{\text{plik}}^2$	763.8	$778.4 \pm 6.0$
$c_{100}$	0.99795	$0.99788 \pm 0.00078$	Age/Gyr	13.854	$13.78 \pm 0.31$	$\chi_{\text{prior}}^2$	1.92	$7.4 \pm 3.6$
$c_{217}$	0.99597	$0.9960 \pm 0.0014$	$z_*$	1090.069	$1090.17 \pm 0.49$	$\chi_{\text{CMB}}^2$	20498.2	$20513.8 \pm 5.7$
$H_0$	66.92	$67.6^{+2.4}_{-2.7}$	$r_*$	144.87	$144.2 \pm 2.6$			
$\Omega_\Lambda$	0.6820	$0.685 \pm 0.019$	$100\theta_*$	1.04112	$1.04098 \pm 0.00071$			

Best-fit  $\chi_{\text{eff}}^2 = 20500.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.02$ ;  $R - 1 = 0.00763$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.46 ( $\Delta$  0.31) plik\_dx11dr2\_HM\_v18\_TT: 763.76 ( $\Delta$  -0.32)

## 11.52 base\_nnu\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02235 \pm 0.00032$	$\Omega_m$	$0.303 \pm 0.015$	$D_A/\text{Gpc}$	$13.84 \pm 0.23$
$\Omega_c h^2$	$0.1195^{+0.0037}_{-0.0043}$	$\Omega_m h^2$	$0.1425^{+0.0038}_{-0.0045}$	$z_{\text{drag}}$	$1059.9 \pm 1.1$
$100\theta_{\text{MC}}$	$1.04095 \pm 0.00055$	$\Omega_m h^3$	$0.0979^{+0.0052}_{-0.0063}$	$r_{\text{drag}}$	$146.8 \pm 2.6$
$\tau$	$0.071^{+0.011}_{-0.013}$	$\sigma_8$	$0.821^{+0.014}_{-0.016}$	$k_D$	$0.1408^{+0.0018}_{-0.0020}$
$N_{\text{eff}}$	$3.15^{+0.27}_{-0.31}$	$\sigma_8 \Omega_m^{0.5}$	$0.4516 \pm 0.0087$	$100\theta_D$	$0.16118 \pm 0.00065$
$\ln(10^{10} A_s)$	$3.074^{+0.025}_{-0.029}$	$\sigma_8 \Omega_m^{0.25}$	$0.6089 \pm 0.0085$	$z_{\text{eq}}$	$3347 \pm 54$
$n_s$	$0.972 \pm 0.013$	$\sigma_8/h^{0.5}$	$0.991 \pm 0.010$	$k_{\text{eq}}$	$0.01028 \pm 0.00014$
$y_{\text{cal}}$	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.446 \pm 0.030$	$100\theta_{\text{eq}}$	$0.823^{+0.010}_{-0.011}$
$A_{217}^{\text{CIB}}$	$64.8 \pm 6.7$	$z_{\text{re}}$	$9.2 \pm 1.1$	$100\theta_{\text{s,eq}}$	$0.4547 \pm 0.0054$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.163^{+0.054}_{-0.064}$	$r_{\text{drag}}/D_V(0.57)$	$0.07209^{+0.00079}_{-0.00089}$
$A_{143}^{\text{tSZ}}$	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.021$	$H(0.57)$	$93.8^{+2.1}_{-2.4}$
$A_{100}^{\text{PS}}$	$262 \pm 28$	$D_{40}$	$1221 \pm 18$	$D_A(0.57)$	$1372 \pm 39$
$A_{143}^{\text{PS}}$	$45 \pm 9$	$D_{220}$	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6738 \pm 0.0038$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{810}$	$2533 \pm 14$	$f\sigma_8(0.57)$	$0.4749^{+0.0063}_{-0.0075}$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$D_{1420}$	$814.1 \pm 5.2$	$\sigma_8(0.57)$	$0.613^{+0.013}_{-0.015}$
$A^{\text{kSZ}}$	$< 5.35$	$D_{2000}$	$229.6 \pm 2.2$	$f_{2000}^{143}$	$31.1 \pm 3.4$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	$0.972 \pm 0.013$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.5$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.9$	$Y_{\text{P}}$	$0.2466 \pm 0.0039$	$f_{2000}^{217}$	$106.7 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.2480 \pm 0.0039$	$\chi^2_{\text{lensing}}$	$10.0 \pm 1.5$
$A_{217}^{\text{dustTT}}$	$81.6 \pm 7.3$	$10^5 D/H$	$2.630 \pm 0.069$	$\chi^2_{\text{WMAPTEB}}$	$19733.8 \pm 2.1$
$c_{100}$	$0.99789 \pm 0.00078$	$\text{Age/Gyr}$	$13.70 \pm 0.29$	$\chi^2_{\text{plik}}$	$780.4 \pm 6.4$
$c_{217}$	$0.9960 \pm 0.0014$	$z_*$	$1090.00 \pm 0.47$	$\chi^2_{\text{prior}}$	$7.4 \pm 3.6$
$H_0$	$68.7^{+2.2}_{-2.5}$	$r_*$	$144.1 \pm 2.5$	$\chi^2_{\text{CMB}}$	$20524.3 \pm 6.5$
$\Omega_\Lambda$	$0.697 \pm 0.015$	$100\theta_*$	$1.04108 \pm 0.00069$		

$$\bar{\chi}^2_{\text{eff}} = 20531.67; \Delta\bar{\chi}^2_{\text{eff}} = 0.91; R - 1 = 0.02458$$

### 11.53 base\_nnu\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02231 \pm 0.00024$	$\Omega_m h^2$	$0.1436 \pm 0.0040$	$r_{\text{drag}}$	$146.5 \pm 2.3$
$\Omega_c h^2$	$0.1207 \pm 0.0039$	$\Omega_m h^3$	$0.0979^{+0.0044}_{-0.0050}$	$k_D$	$0.1411 \pm 0.0017$
$100\theta_{\text{MC}}$	$1.04080 \pm 0.00055$	$\sigma_8$	$0.830 \pm 0.016$	$100\theta_D$	$0.16117 \pm 0.00057$
$\tau$	$0.075 \pm 0.012$	$\sigma_8 \Omega_m^{0.5}$	$0.4614 \pm 0.0095$	$z_{\text{eq}}$	$3373 \pm 32$
$N_{\text{eff}}$	$3.14 \pm 0.23$	$\sigma_8 \Omega_m^{0.25}$	$0.619 \pm 0.011$	$k_{\text{eq}}$	$0.01036 \pm 0.00015$
$\ln(10^{10} A_s)$	$3.087 \pm 0.026$	$\sigma_8/h^{0.5}$	$1.005 \pm 0.014$	$100\theta_{\text{eq}}$	$0.8184 \pm 0.0060$
$n_s$	$0.9696 \pm 0.0086$	$\langle d^2 \rangle^{1/2}$	$2.479 \pm 0.033$	$100\theta_{s,\text{eq}}$	$0.4521 \pm 0.0031$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$z_{\text{re}}$	$9.7 \pm 1.1$	$r_{\text{drag}}/D_V(0.57)$	$0.07169 \pm 0.00046$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.6$	$10^9 A_s$	$2.192^{+0.054}_{-0.063}$	$H(0.57)$	$93.6 \pm 1.6$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s e^{-2\tau}$	$1.885 \pm 0.021$	$D_A(0.57)$	$1378 \pm 26$
$A_{143}^{\text{tSZ}}$	$5.0 \pm 1.9$	$D_{40}$	$1230 \pm 15$	$F_{\text{AP}}(0.57)$	$0.6755 \pm 0.0022$
$A_{100}^{\text{PS}}$	$261 \pm 28$	$D_{220}$	$5720 \pm 40$	$f\sigma_8(0.57)$	$0.4818 \pm 0.0087$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$D_{810}$	$2535 \pm 14$	$\sigma_8(0.57)$	$0.618 \pm 0.012$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{1420}$	$814.2 \pm 5.1$	$f_{2000}^{143}$	$30.8 \pm 3.3$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{2000}$	$229.8 \pm 2.2$	$f_{2000}^{143 \times 217}$	$33.1 \pm 2.4$
$A^{\text{kSZ}}$	$< 5.01$	$n_{s,0.002}$	$0.9696 \pm 0.0086$	$f_{2000}^{217}$	$106.6 \pm 2.3$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$Y_{\text{P}}$	$0.2466 \pm 0.0031$	$\chi_{\text{WMAPTEB}}^2$	$19734.8 \pm 2.3$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	$0.2480 \pm 0.0032$	$\chi_{\text{plik}}^2$	$778.4 \pm 5.7$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$10^5 \text{D}/\text{H}$	$2.637 \pm 0.066$	$\chi_{6\text{DF}}^2$	$0.065 \pm 0.088$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.4$	$\text{Age}/\text{Gyr}$	$13.71 \pm 0.22$	$\chi_{\text{MGS}}^2$	$1.40 \pm 0.60$
$c_{100}$	$0.99789 \pm 0.00079$	$z_*$	$1090.15 \pm 0.48$	$\chi_{\text{DR11CMass}}^2$	$2.96 \pm 0.77$
$c_{217}$	$0.9960 \pm 0.0014$	$r_*$	$143.9 \pm 2.2$	$\chi_{\text{DR11LOWZ}}^2$	$0.73 \pm 0.64$
$H_0$	$68.2 \pm 1.5$	$100\theta_*$	$1.04093 \pm 0.00067$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$\Omega_\Lambda$	$0.6906 \pm 0.0086$	$D_A/\text{Gpc}$	$13.82 \pm 0.20$	$\chi_{\text{CMB}}^2$	$20513.2 \pm 5.5$
$\Omega_m$	$0.3094 \pm 0.0086$	$z_{\text{drag}}$	$1059.91 \pm 0.87$	$\chi_{\text{BAO}}^2$	$5.2 \pm 1.1$

$$\bar{\chi}_{\text{eff}}^2 = 20525.70; \Delta\chi_{\text{eff}}^2 = 0.80; R - 1 = 0.01099$$

## 12 nnu+meffsterile

### 12.1 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022253	$0.02243^{+0.00026}_{-0.00032}$	$\Omega_\Lambda$	0.6860	$0.680 \pm 0.021$	$r_*$	144.61	$142.3^{+2.2}_{-1.2}$
$\Omega_c h^2$	0.11962	$0.1214^{+0.0047}_{-0.0036}$	$\Omega_m$	0.3140	$0.320 \pm 0.021$	$100\theta_*$	1.04110	$1.04062^{+0.00064}_{-0.00055}$
$100\theta_{MC}$	1.04092	$1.04056 \pm 0.00053$	$\Omega_m h^2$	0.14255	$0.1476^{+0.0033}_{-0.0048}$	$D_A/\text{Gpc}$	13.890	$13.68^{+0.21}_{-0.11}$
$\tau$	0.0746	$0.086 \pm 0.021$	$\Omega_\nu h^2$	0.00068	$< 0.00435$	$z_{\text{drag}}$	1059.63	$1060.56^{+0.66}_{-1.0}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.003	$< 0.348$	$\Omega_m h^3$	0.09604	$0.1004^{+0.0018}_{-0.0048}$	$r_{\text{drag}}$	147.32	$144.9^{+2.3}_{-1.2}$
$N_{\text{eff}}$	3.046	$< 3.36$	$\sigma_8$	0.8263	$0.801^{+0.042}_{-0.031}$	$k_D$	0.14054	$0.1424^{+0.0010}_{-0.0017}$
$\ln(10^{10} A_s)$	3.0828	$3.112^{+0.041}_{-0.046}$	$\sigma_8 \Omega_m^{0.5}$	0.4631	$0.452^{+0.018}_{-0.015}$	$100\theta_D$	0.16093	$0.16136^{+0.00038}_{-0.00062}$
$n_s$	0.9655	$0.9726^{+0.0087}_{-0.014}$	$\sigma_8 \Omega_m^{0.25}$	0.6186	$0.602^{+0.027}_{-0.018}$	$z_{\text{eq}}$	3390	$3324^{+76}_{-58}$
$y_{\text{cal}}$	1.00021	$1.0003 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0067	$0.971^{+0.046}_{-0.028}$	$k_{\text{eq}}$	0.010348	$0.01035^{+0.00023}_{-0.00017}$
$A_{217}^{\text{CIB}}$	67.3	$65.3 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.4894	$2.498 \pm 0.049$	$100\theta_{\text{eq}}$	0.8151	$0.830^{+0.011}_{-0.016}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	9.67	$10.7 \pm 1.9$	$100\theta_{\text{s,eq}}$	0.4504	$0.4579^{+0.0056}_{-0.0084}$
$A_{143}^{\text{tSZ}}$	7.22	$4.8 \pm 2.0$	$10^9 A_s$	2.182	$2.249^{+0.088}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07144	$0.0711 \pm 0.0011$
$A_{100}^{\text{PS}}$	252.6	$264 \pm 28$	$10^9 A_s e^{-2\tau}$	1.8794	$1.893^{+0.016}_{-0.019}$	$H(0.57)$	92.91	$94.15^{+0.64}_{-1.8}$
$A_{143}^{\text{PS}}$	38.5	$47 \pm 8$	$D_{40}$	1234.8	$1227^{+21}_{-19}$	$D_A(0.57)$	1390.7	$1376^{+35}_{-17}$
$A_{143 \times 217}^{\text{PS}}$	32.2	$40^{+9}_{-10}$	$D_{220}$	5717.9	$5718 \pm 42$	$F_{\text{AP}}(0.57)$	0.6767	$0.6781 \pm 0.0052$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$D_{810}$	2534.4	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4811	$0.468^{+0.022}_{-0.015}$
$A^{\text{kSZ}}$	0.00	$< 5.39$	$D_{1420}$	814.5	$812.9 \pm 5.2$	$\sigma_8(0.57)$	0.6141	$0.594^{+0.034}_{-0.026}$
$A_{100}^{\text{dustTT}}$	7.45	$7.5 \pm 1.9$	$D_{2000}$	230.38	$228.7 \pm 2.1$	$f_{2000}^{143}$	29.68	$32.0 \pm 3.3$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$n_{\text{s}, 0.002}$	0.9655	$0.9726^{+0.0087}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.31	$34.1 \pm 2.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.61	$17.3 \pm 4.2$	$Y_{\text{P}}$	0.24534	$0.2488^{+0.0014}_{-0.0034}$	$f_{2000}^{217}$	105.92	$107.5 \pm 2.3$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.5$	$Y_{\text{P}}^{\text{BBN}}$	0.24667	$0.2501^{+0.0014}_{-0.0035}$	$\chi_{\text{lowTEB}}^2$	10496.19	$10497.2 \pm 2.7$
$c_{100}$	0.99795	$0.99787 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.613	$2.667^{+0.055}_{-0.066}$	$\chi_{\text{plik}}^2$	763.8	$780.1 \pm 6.3$
$c_{217}$	0.99594	$0.9961 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.808	$13.62^{+0.23}_{-0.085}$	$\chi_{\text{prior}}^2$	2.01	$7.5 \pm 3.6$
$H_0$	67.38	$68.0^{+1.2}_{-2.3}$	$z_*$	1090.04	$1090.43 \pm 0.51$	$\chi_{\text{CMB}}^2$	11260.0	$11277.3 \pm 6.0$

Best-fit  $\chi_{\text{eff}}^2 = 11261.98$ ;  $\Delta\chi_{\text{eff}}^2 = 0.05$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.79$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.97$ ;  $R - 1 = 0.01342$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.19 ( $\Delta$  -0.28) plik\_dx11dr2\_HM\_v18\_TT: 763.77 ( $\Delta$  0.40)

## 12.2 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022236	$0.02237 \pm 0.00018$	$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.131 \pm 0.029$	$Y_P^{\text{BBN}}$	0.24666	$0.24879^{+0.00086}_{-0.0020}$
$\Omega_c h^2$	0.11997	$0.1204^{+0.0035}_{-0.0025}$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.084$	$10^5 D/H$	2.6166	$2.646^{+0.036}_{-0.042}$
$100\theta_{\text{MC}}$	1.040736	$1.04055 \pm 0.00036$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	Age/Gyr	13.816	$13.72^{+0.11}_{-0.047}$
$\tau$	0.0791	$0.085 \pm 0.018$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.339 \pm 0.081$	$z_*$	1090.091	$1090.34^{+0.35}_{-0.39}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.007	$< 0.367$	$A_{217}^{\text{dust}TE}$	1.675	$1.67 \pm 0.25$	$r_*$	144.52	$143.1^{+1.5}_{-0.76}$
$N_{\text{eff}}$	3.046	$< 3.24$	$c_{100}$	0.99822	$0.99814 \pm 0.00077$	$100\theta_*$	1.040940	$1.04067^{+0.00042}_{-0.00037}$
$\ln(10^{10} A_s)$	3.0938	$3.109 \pm 0.035$	$c_{217}$	0.99596	$0.9961 \pm 0.0014$	$D_A/\text{Gpc}$	13.884	$13.75^{+0.14}_{-0.071}$
$n_s$	0.9637	$0.9668^{+0.0057}_{-0.0075}$	$H_0$	67.17	$67.18^{+0.75}_{-1.0}$	$z_{\text{drag}}$	1059.63	$1060.26^{+0.43}_{-0.63}$
$y_{\text{cal}}$	1.00038	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6832	$0.675^{+0.015}_{-0.012}$	$r_{\text{drag}}$	147.23	$145.7^{+1.5}_{-0.77}$
$A_{217}^{\text{CIB}}$	66.4	$64.8 \pm 6.6$	$\Omega_m$	0.3168	$0.325^{+0.012}_{-0.015}$	$k_D$	0.14062	$0.14186^{+0.00066}_{-0.0012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m h^2$	0.14292	$0.1465^{+0.0023}_{-0.0038}$	$100\theta_D$	0.160916	$0.16110^{+0.00022}_{-0.00032}$
$A_{143}^{\text{tSZ}}$	7.07	$5.2 \pm 1.9$	$\Omega_\nu h^2$	0.00072	$0.0038^{+0.0010}_{-0.0034}$	$z_{\text{eq}}$	3398	$3341^{+64}_{-39}$
$A_{100}^{\text{PS}}$	257.4	$264 \pm 28$	$\Omega_m h^3$	0.09600	$0.0984^{+0.0010}_{-0.0026}$	$k_{\text{eq}}$	0.010373	$0.01034^{+0.00018}_{-0.00012}$
$A_{143}^{\text{PS}}$	40.9	$46 \pm 8$	$\sigma_8$	0.8315	$0.798^{+0.037}_{-0.025}$	$100\theta_{\text{eq}}$	0.8135	$0.8261^{+0.0075}_{-0.014}$
$A_{143 \times 217}^{\text{PS}}$	36.7	$41^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.455^{+0.016}_{-0.012}$	$100\theta_{s, \text{eq}}$	0.4496	$0.4561^{+0.0039}_{-0.0073}$
$A_{217}^{\text{PS}}$	98.8	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.602^{+0.025}_{-0.016}$	$r_{\text{drag}}/D_V(0.57)$	0.07128	$0.07083^{+0.00076}_{-0.00065}$
$A^{\text{kSZ}}$	0.01	$< 4.64$	$\sigma_8/h^{0.5}$	1.0146	$0.974^{+0.043}_{-0.027}$	$H(0.57)$	92.82	$93.39^{+0.34}_{-0.77}$
$A_{100}^{\text{dust}TT}$	7.29	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5116	$2.516 \pm 0.040$	$D_A(0.57)$	1393.5	$1389^{+15}_{-9.2}$
$A_{143}^{\text{dust}TT}$	8.88	$9.0 \pm 1.8$	$z_{\text{re}}$	10.09	$10.6^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67736	$0.6794^{+0.0030}_{-0.0037}$
$A_{143 \times 217}^{\text{dust}TT}$	17.45	$17.1 \pm 4.2$	$10^9 A_s$	2.206	$2.240 \pm 0.079$	$f\sigma_8(0.57)$	0.4848	$0.468^{+0.020}_{-0.013}$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8834	$1.891 \pm 0.014$	$\sigma_8(0.57)$	0.6173	$0.591^{+0.030}_{-0.020}$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0811 \pm 0.0057$	$D_{40}$	1242.8	$1238 \pm 15$	$f_{2000}^{143}$	29.44	$31.0 \pm 2.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04865	$0.0487 \pm 0.0050$	$D_{220}$	5729.2	$5727 \pm 39$	$f_{2000}^{143 \times 217}$	32.32	$33.4 \pm 2.1$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.099 \pm 0.032$	$D_{810}$	2536.4	$2537 \pm 14$	$f_{2000}^{217}$	105.84	$106.9 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1001 \pm 0.0069$	$D_{1420}$	814.42	$813.4 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10497.28	$10497.9 \pm 2.5$
$A_{143 \times 217}^{\text{dust}EE}$	0.2230	$0.222 \pm 0.047$	$D_{2000}$	230.38	$229.3 \pm 1.8$	$\chi_{\text{plik}}^2$	2431.7	$2453.0 \pm 7.1$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$n_{s, 0.002}$	0.9637	$0.9668^{+0.0057}_{-0.0075}$	$\chi_{\text{prior}}^2$	6.7	$19.5 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1420	$0.141 \pm 0.038$	$Y_P$	0.24533	$0.24746^{+0.00086}_{-0.0020}$	$\chi_{\text{CMB}}^2$	12928.9	$12951.0 \pm 6.9$

Best-fit  $\chi_{\text{eff}}^2 = 12935.64$ ;  $\Delta\chi_{\text{eff}}^2 = 0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.75$ ;  $R - 1 = 0.01538$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.28 ( $\Delta$  0.35) plik\_dx11dr2\_HM.v18\_TTTEEE: 2431.66 ( $\Delta$  0.02)



### 12.3 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02246^{+0.00027}_{-0.00030}$	$\Omega_m$	0.3067	$0.314 \pm 0.019$	$D_A/\text{Gpc}$	13.894	$13.67^{+0.20}_{-0.12}$
$\Omega_c h^2$	0.11873	$0.1216 \pm 0.0036$	$\Omega_m h^2$	0.14181	$0.1472^{+0.0033}_{-0.0046}$	$z_{\text{drag}}$	1059.70	$1060.61^{+0.71}_{-0.95}$
$100\theta_{\text{MC}}$	1.04103	$1.04066 \pm 0.00051$	$\Omega_\nu h^2$	0.00078	$0.00312^{+0.00089}_{-0.0026}$	$r_{\text{drag}}$	147.36	$144.9^{+2.3}_{-1.3}$
$\tau$	0.0690	$0.078^{+0.019}_{-0.021}$	$\Omega_m h^3$	0.09643	$0.1009^{+0.0021}_{-0.0049}$	$k_D$	0.14044	$0.1423^{+0.0011}_{-0.0017}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.013	$< 0.282$	$\sigma_8$	0.8149	$0.795^{+0.032}_{-0.024}$	$100\theta_D$	0.16100	$0.16149^{+0.00041}_{-0.00059}$
$N_{\text{eff}}$	3.073	$< 3.41$	$\sigma_8 \Omega_m^{0.5}$	0.4513	$0.445^{+0.012}_{-0.0099}$	$z_{\text{eq}}$	3358	$3315^{+59}_{-52}$
$\ln(10^{10} A_s)$	3.0687	$3.095^{+0.037}_{-0.043}$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.595^{+0.019}_{-0.012}$	$k_{\text{eq}}$	0.010268	$0.01033 \pm 0.00017$
$n_s$	0.9695	$0.9763^{+0.0092}_{-0.013}$	$\sigma_8/h^{0.5}$	0.9882	$0.960^{+0.033}_{-0.019}$	$100\theta_{\text{eq}}$	0.8212	$0.831^{+0.010}_{-0.012}$
$y_{\text{cal}}$	0.999999	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4486	$2.456 \pm 0.030$	$100\theta_{s, \text{eq}}$	0.4536	$0.4585^{+0.0052}_{-0.0063}$
$A_{217}^{\text{CIB}}$	67.8	$65.9 \pm 6.7$	$z_{\text{re}}$	9.12	$9.96 \pm 1.8$	$r_{\text{drag}}/D_V(0.57)$	0.07185	$0.0715 \pm 0.0010$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.151	$2.211^{+0.079}_{-0.098}$	$H(0.57)$	93.25	$94.49^{+0.77}_{-1.8}$
$A_{143}^{\text{tSZ}}$	7.17	$4.7 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8740	$1.890^{+0.016}_{-0.019}$	$D_A(0.57)$	1381.9	$1368^{+33}_{-18}$
$A_{100}^{\text{PS}}$	253.8	$266 \pm 28$	$D_{40}$	1222.6	$1215 \pm 17$	$F_{\text{AP}}(0.57)$	0.67482	$0.6765 \pm 0.0048$
$A_{143}^{\text{PS}}$	39.5	$48 \pm 8$	$D_{220}$	5714.3	$5718 \pm 41$	$f\sigma_8(0.57)$	0.4727	$0.463^{+0.016}_{-0.010}$
$A_{143 \times 217}^{\text{PS}}$	32.7	$40^{+9}_{-10}$	$D_{810}$	2532.5	$2536 \pm 14$	$\sigma_8(0.57)$	0.6074	$0.591^{+0.026}_{-0.022}$
$A_{217}^{\text{PS}}$	96.6	$96 \pm 10$	$D_{1420}$	814.6	$813.1 \pm 5.1$	$f_{2000}^{143}$	30.13	$32.7 \pm 3.2$
$A^{\text{kSZ}}$	0.01	$< 5.83$	$D_{2000}$	230.13	$228.4 \pm 2.0$	$f_{2000}^{143 \times 217}$	32.66	$34.6 \pm 2.3$
$A_{100}^{\text{dustTT}}$	7.51	$7.6 \pm 1.9$	$n_{s, 0.002}$	0.9695	$0.9763^{+0.0092}_{-0.013}$	$f_{2000}^{217}$	106.13	$107.9 \pm 2.2$
$A_{143}^{\text{dustTT}}$	9.13	$9.1 \pm 1.8$	$Y_P$	0.24573	$0.2492^{+0.0016}_{-0.0035}$	$\chi_{\text{lensing}}^2$	9.17	$9.9 \pm 1.5$
$A_{143 \times 217}^{\text{dustTT}}$	17.74	$17.4 \pm 4.2$	$Y_P^{\text{BBN}}$	0.24706	$0.2506^{+0.0016}_{-0.0035}$	$\chi_{\text{lowTEB}}^2$	10494.78	$10495.3 \pm 1.6$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$10^5 D/H$	2.613	$2.674^{+0.056}_{-0.066}$	$\chi_{\text{plik}}^2$	766.3	$781.9 \pm 5.9$
$c_{100}$	0.99791	$0.99787 \pm 0.00077$	Age/Gyr	13.773	$13.58^{+0.23}_{-0.10}$	$\chi_{\text{prior}}^2$	2.09	$7.5 \pm 3.6$
$c_{217}$	0.99600	$0.9962 \pm 0.0015$	$z_*$	1089.92	$1090.38^{+0.48}_{-0.54}$	$\chi_{\text{CMB}}^2$	11270.2	$11287.1 \pm 5.9$
$H_0$	68.00	$68.6^{+1.3}_{-2.1}$	$r_*$	144.67	$142.3^{+2.2}_{-1.3}$			
$\Omega_\Lambda$	0.6933	$0.686 \pm 0.019$	$100\theta_*$	1.04121	$1.04069^{+0.00061}_{-0.00055}$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.29$ ;  $R - 1 = 0.00725$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta$  -0.00) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.78 ( $\Delta$  -0.07) plik\_dx11dr2\_HM\_v18\_TT: 766.28 ( $\Delta$  -0.04)

## 12.4 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022271	$0.02236 \pm 0.00018$	$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	Age/Gyr	13.805	$13.71^{+0.10}_{-0.047}$
$\Omega_c h^2$	0.11920	$0.1204^{+0.0028}_{-0.0025}$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$z_*$	1089.979	$1090.32^{+0.35}_{-0.40}$
$100\theta_{\text{MC}}$	1.040857	$1.04063 \pm 0.00037$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.337 \pm 0.080$	$r_*$	144.70	$143.1^{+1.4}_{-0.80}$
$\tau$	0.0632	$0.069 \pm 0.015$	$A_{217}^{\text{dust}TE}$	1.663	$1.67 \pm 0.26$	$100\theta_*$	1.041055	$1.04075^{+0.00043}_{-0.00037}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.002	$< 0.332$	$c_{100}$	0.99818	$0.99812 \pm 0.00078$	$D_A/\text{Gpc}$	13.900	$13.75^{+0.13}_{-0.075}$
$N_{\text{eff}}$	3.048	$< 3.24$	$c_{217}$	0.99611	$0.9962 \pm 0.0014$	$z_{\text{drag}}$	1059.67	$1060.24^{+0.44}_{-0.60}$
$\ln(10^{10} A_s)$	3.0587	$3.075 \pm 0.029$	$H_0$	67.54	$67.33^{+0.80}_{-0.99}$	$r_{\text{drag}}$	147.40	$145.8^{+1.5}_{-0.82}$
$n_s$	0.9658	$0.9677^{+0.0058}_{-0.0072}$	$\Omega_\Lambda$	0.6884	$0.677^{+0.015}_{-0.012}$	$k_D$	0.14046	$0.14178^{+0.00069}_{-0.0012}$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0025$	$\Omega_m$	0.3116	$0.323^{+0.012}_{-0.015}$	$100\theta_D$	0.160915	$0.16114^{+0.00022}_{-0.00031}$
$A_{217}^{\text{CIB}}$	67.9	$65.7 \pm 6.6$	$\Omega_m h^2$	0.14213	$0.1463^{+0.0024}_{-0.0037}$	$z_{\text{eq}}$	3379.9	$3341^{+49}_{-37}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_\nu h^2$	0.00067	$0.0035^{+0.0011}_{-0.0027}$	$k_{\text{eq}}$	0.010317	$0.01033^{+0.00015}_{-0.00012}$
$A_{143}^{\text{tSZ}}$	7.31	$5.0 \pm 2.0$	$\Omega_m h^3$	0.09600	$0.0985^{+0.0011}_{-0.0025}$	$100\theta_{\text{eq}}$	0.8170	$0.8260^{+0.0073}_{-0.011}$
$A_{100}^{\text{PS}}$	258.1	$266 \pm 28$	$\sigma_8$	0.8145	$0.785^{+0.030}_{-0.021}$	$100\theta_{\text{s,eq}}$	0.45138	$0.4561^{+0.0037}_{-0.0055}$
$A_{143}^{\text{PS}}$	38.7	$46 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.446^{+0.012}_{-0.0092}$	$r_{\text{drag}}/D_V(0.57)$	0.07157	$0.07095^{+0.00076}_{-0.00066}$
$A_{143 \times 217}^{\text{PS}}$	32.6	$40^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.591^{+0.019}_{-0.013}$	$H(0.57)$	92.97	$93.45^{+0.35}_{-0.73}$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9911	$0.956^{+0.034}_{-0.021}$	$D_A(0.57)$	1388.6	$1387^{+14}_{-10}$
$A^{\text{kSZ}}$	0.01	$< 5.25$	$\langle d^2 \rangle^{1/2}$	2.4541	$2.468 \pm 0.027$	$F_{\text{AP}}(0.57)$	0.67605	$0.6789^{+0.0030}_{-0.0036}$
$A_{100}^{\text{dust}TT}$	7.54	$7.6 \pm 1.9$	$z_{\text{re}}$	8.57	$9.1^{+1.5}_{-1.4}$	$f\sigma_8(0.57)$	0.4736	$0.459^{+0.015}_{-0.010}$
$A_{143}^{\text{dust}TT}$	9.10	$9.1 \pm 1.8$	$10^9 A_s$	2.130	$2.167^{+0.061}_{-0.069}$	$\sigma_8(0.57)$	0.6059	$0.581^{+0.025}_{-0.017}$
$A_{143 \times 217}^{\text{dust}TT}$	17.71	$17.3 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8771	$1.887 \pm 0.013$	$f_{2000}^{143}$	29.89	$31.7 \pm 2.8$
$A_{217}^{\text{dust}TT}$	82.0	$81.6 \pm 7.4$	$D_{40}$	1229.6	$1227 \pm 13$	$f_{2000}^{143 \times 217}$	32.59	$34.0 \pm 2.1$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0814 \pm 0.0057$	$D_{220}$	5721.9	$5721 \pm 39$	$f_{2000}^{217}$	106.07	$107.3 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.04899	$0.0490 \pm 0.0050$	$D_{810}$	2534.0	$2535 \pm 13$	$\chi_{\text{lensing}}^2$	9.73	$10.5 \pm 1.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0991	$0.099 \pm 0.033$	$D_{1420}$	814.58	$813.3 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10495.29	$10495.7 \pm 1.3$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1003 \pm 0.0069$	$D_{2000}$	230.09	$228.8 \pm 1.7$	$\chi_{\text{plik}}^2$	2434.9	$2455.8 \pm 7.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2242	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9658	$0.9677^{+0.0058}_{-0.0072}$	$\chi_{\text{prior}}^2$	7.1	$19.7 \pm 5.6$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$Y_P$	0.24537	$0.24750^{+0.00087}_{-0.0020}$	$\chi_{\text{CMB}}^2$	12940.0	$12961.9 \pm 7.0$
$A_{100}^{\text{dust}TE}$	0.1413	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24670	$0.24883^{+0.00088}_{-0.0020}$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.6105	$2.647^{+0.036}_{-0.043}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.05$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12981.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.49$ ;  $R - 1 = 0.01727$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.73 ( $\Delta$  -0.04) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.29 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18.TTTEEE: 2434.94 ( $\Delta$  0.03)

## 12.5 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022318	$0.02248 \pm 0.00024$	$\Omega_m h^2$	0.14228	$0.1461^{+0.0024}_{-0.0044}$	$r_{\text{drag}}$	147.16	$145.2^{+2.4}_{-1.1}$
$\Omega_c h^2$	0.11932	$0.1209 \pm 0.0041$	$\Omega_\nu h^2$	0.00065	$0.00273^{+0.00060}_{-0.0023}$	$k_D$	0.14063	$0.14207^{+0.00089}_{-0.0017}$
$100\theta_{\text{MC}}$	1.04090	$1.04070^{+0.00055}_{-0.00049}$	$\Omega_m h^3$	0.09668	$0.1004^{+0.0019}_{-0.0049}$	$100\theta_D$	0.16098	$0.16136^{+0.00040}_{-0.00064}$
$\tau$	0.0800	$0.089 \pm 0.020$	$\sigma_8$	0.8292	$0.812^{+0.031}_{-0.024}$	$z_{\text{eq}}$	3368.8	$3316^{+60}_{-37}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.225$	$\sigma_8 \Omega_m^{0.5}$	0.4603	$0.452^{+0.016}_{-0.013}$	$k_{\text{eq}}$	0.010306	$0.01031^{+0.00019}_{-0.00014}$
$N_{\text{eff}}$	3.081	$< 3.36$	$\sigma_8 \Omega_m^{0.25}$	0.6178	$0.606^{+0.022}_{-0.017}$	$100\theta_{\text{eq}}$	0.8192	$0.8305^{+0.0070}_{-0.013}$
$\ln(10^{10} A_s)$	3.0929	$3.117 \pm 0.042$	$\sigma_8/h^{0.5}$	1.0059	$0.980^{+0.036}_{-0.026}$	$100\theta_{s, \text{eq}}$	0.4525	$0.4583^{+0.0036}_{-0.0067}$
$n_s$	0.9692	$0.9761^{+0.0073}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	2.4844	$2.485 \pm 0.045$	$r_{\text{drag}}/D_V(0.57)$	0.071761	$0.07163 \pm 0.00047$
$y_{\text{cal}}$	1.00040	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.14	$11.0 \pm 1.8$	$H(0.57)$	93.29	$94.41^{+0.70}_{-1.6}$
$A_{217}^{\text{CIB}}$	67.3	$65.1 \pm 6.7$	$10^9 A_s$	2.204	$2.261^{+0.088}_{-0.10}$	$D_A(0.57)$	1382.0	$1367^{+26}_{-13}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8783	$1.889^{+0.015}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67518	$0.6756 \pm 0.0022$
$A_{143}^{\text{tSZ}}$	7.11	$4.9 \pm 2.0$	$D_{40}$	1229.7	$1222 \pm 17$	$f\sigma_8(0.57)$	0.4812	$0.473^{+0.017}_{-0.013}$
$A_{100}^{\text{PS}}$	254.3	$263 \pm 28$	$D_{220}$	5717.8	$5722 \pm 41$	$\sigma_8(0.57)$	0.6177	$0.605^{+0.023}_{-0.019}$
$A_{143}^{\text{PS}}$	38.9	$46 \pm 8$	$D_{810}$	2534.3	$2536 \pm 14$	$f_{2000}^{143}$	29.70	$31.5 \pm 3.2$
$A_{143 \times 217}^{\text{PS}}$	32.3	$39^{+10}_{-10}$	$D_{1420}$	814.9	$813.6 \pm 5.1$	$f_{2000}^{143 \times 217}$	32.31	$33.7 \pm 2.3$
$A_{217}^{\text{PS}}$	96.8	$97 \pm 10$	$D_{2000}$	230.48	$229.2 \pm 2.0$	$f_{2000}^{217}$	105.91	$107.1 \pm 2.2$
$A^{\text{kSZ}}$	0.00	$< 5.32$	$n_{s, 0.002}$	0.9692	$0.9761^{+0.0073}_{-0.011}$	$\chi_{\text{lowTEB}}^2$	10495.95	$10496.9 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.41	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24585	$0.2487^{+0.0014}_{-0.0034}$	$\chi_{\text{plik}}^2$	764.0	$779.5 \pm 6.2$
$A_{143}^{\text{dustTT}}$	9.09	$9.1 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24717	$0.2500^{+0.0014}_{-0.0034}$	$\chi_{6\text{DF}}^2$	0.0101	$0.073 \pm 0.095$
$A_{143 \times 217}^{\text{dustTT}}$	17.79	$17.2 \pm 4.2$	$10^5 D/H$	2.613	$2.655^{+0.050}_{-0.071}$	$\chi_{\text{MGS}}^2$	1.41	$1.34 \pm 0.60$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.4$	Age/Gyr	13.764	$13.60^{+0.22}_{-0.096}$	$\chi_{\text{DR11CMass}}^2$	2.412	$3.04 \pm 0.86$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$z_*$	1089.963	$1090.23^{+0.38}_{-0.48}$	$\chi_{\text{DR11LOWZ}}^2$	0.482	$0.81 \pm 0.69$
$c_{217}$	0.99600	$0.9960 \pm 0.0015$	$r_*$	144.47	$142.6^{+2.3}_{-1.0}$	$\chi_{\text{prior}}^2$	2.06	$7.5 \pm 3.6$
$H_0$	67.95	$68.68^{+0.82}_{-1.5}$	$100\theta_*$	1.04107	$1.04075^{+0.00065}_{-0.00052}$	$\chi_{\text{CMB}}^2$	11260.0	$11276.4 \pm 5.8$
$\Omega_\Lambda$	0.6919	$0.6901 \pm 0.0085$	$D_A/\text{Gpc}$	13.877	$13.71^{+0.21}_{-0.096}$	$\chi_{\text{BAO}}^2$	4.31	$5.3 \pm 1.3$
$\Omega_m$	0.3081	$0.3099 \pm 0.0085$	$z_{\text{drag}}$	1059.78	$1060.56^{+0.65}_{-0.91}$			

Best-fit  $\chi_{\text{eff}}^2 = 11266.35$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11289.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.73$ ;  $R - 1 = 0.01798$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.48 ( $\Delta$  -0.13) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.95  
( $\Delta$  -0.47) plik\_dx11dr2\_HM\_v18\_TT: 764.03 ( $\Delta$  0.43)

## 12.6 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022376	$0.02251 \pm 0.00024$	$\Omega_m h^2$	0.14322	$0.1464^{+0.0026}_{-0.0046}$	$r_{\text{drag}}$	146.61	$145.0^{+2.5}_{-1.2}$
$\Omega_c h^2$	0.12019	$0.1213 \pm 0.0042$	$\Omega_\nu h^2$	0.00065	$0.00264^{+0.00059}_{-0.0022}$	$k_D$	0.14106	$0.14222^{+0.00098}_{-0.0018}$
$100\theta_{\text{MC}}$	1.04092	$1.04068 \pm 0.00051$	$\Omega_m h^3$	0.09779	$0.1009^{+0.0022}_{-0.0051}$	$100\theta_D$	0.16107	$0.16141^{+0.00043}_{-0.00066}$
$\tau$	0.0831	$0.091 \pm 0.020$	$\sigma_8$	0.8348	$0.814^{+0.030}_{-0.025}$	$z_{\text{eq}}$	3368.3	$3315^{+58}_{-36}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.215$	$\sigma_8 \Omega_m^{0.5}$	0.4626	$0.452^{+0.016}_{-0.013}$	$k_{\text{eq}}$	0.010339	$0.01032^{+0.00019}_{-0.00015}$
$N_{\text{eff}}$	3.132	$< 3.39$	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.607^{+0.022}_{-0.017}$	$100\theta_{\text{eq}}$	0.8195	$0.8307^{+0.0068}_{-0.012}$
$\ln(10^{10} A_s)$	3.1020	$3.120 \pm 0.042$	$\sigma_8/h^{0.5}$	1.0102	$0.981^{+0.035}_{-0.026}$	$100\theta_{s, \text{eq}}$	0.45261	$0.4584^{+0.0035}_{-0.0064}$
$n_s$	0.9710	$0.9774^{+0.0077}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	2.4915	$2.484 \pm 0.045$	$r_{\text{drag}}/D_V(0.57)$	0.071806	$0.07168 \pm 0.00046$
$y_{\text{cal}}$	1.00052	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.43	$11.1 \pm 1.8$	$H(0.57)$	93.68	$94.58^{+0.79}_{-1.7}$
$A_{217}^{\text{CIB}}$	66.7	$65.1 \pm 6.7$	$10^9 A_s$	2.224	$2.267^{+0.089}_{-0.10}$	$D_A(0.57)$	1375.8	$1364^{+26}_{-15}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s e^{-2\tau}$	1.8838	$1.890^{+0.015}_{-0.021}$	$F_{\text{AP}}(0.57)$	0.67493	$0.6754 \pm 0.0021$
$A_{143}^{\text{tSZ}}$	7.09	$4.9 \pm 2.0$	$D_{40}$	1230.0	$1221 \pm 17$	$f\sigma_8(0.57)$	0.4842	$0.473^{+0.017}_{-0.014}$
$A_{100}^{\text{PS}}$	252.9	$263 \pm 29$	$D_{220}$	5722.3	$5723 \pm 41$	$\sigma_8(0.57)$	0.6221	$0.606^{+0.023}_{-0.019}$
$A_{143}^{\text{PS}}$	40.0	$46 \pm 8$	$D_{810}$	2536.9	$2537 \pm 14$	$f_{2000}^{143}$	29.67	$31.6 \pm 3.2$
$A_{143 \times 217}^{\text{PS}}$	34.5	$39^{+10}_{-10}$	$D_{1420}$	815.3	$813.6 \pm 5.1$	$f_{2000}^{143 \times 217}$	32.37	$33.7 \pm 2.4$
$A_{217}^{\text{PS}}$	98.2	$97 \pm 10$	$D_{2000}$	230.54	$229.2 \pm 2.1$	$f_{2000}^{217}$	105.98	$107.2 \pm 2.2$
$A^{\text{kSZ}}$	0.01	$< 5.37$	$n_{s, 0.002}$	0.9710	$0.9774^{+0.0077}_{-0.011}$	$\chi_{\text{lowTEB}}^2$	10496.13	$10496.8 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24655	$0.2490^{+0.0016}_{-0.0036}$	$\chi_{\text{plik}}^2$	763.9	$779.7 \pm 6.2$
$A_{143}^{\text{dustTT}}$	9.03	$9.1 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24788	$0.2504^{+0.0016}_{-0.0036}$	$\chi_{\text{H070p6}}^2$	0.485	$0.40 \pm 0.34$
$A_{143 \times 217}^{\text{dustTT}}$	17.63	$17.3 \pm 4.1$	$10^5 D/H$	2.620	$2.659^{+0.053}_{-0.073}$	$\chi_{6\text{DF}}^2$	0.0060	$0.064 \pm 0.086$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.4$	$\text{Age/Gyr}$	13.709	$13.58^{+0.23}_{-0.11}$	$\chi_{\text{MGS}}^2$	1.47	$1.40 \pm 0.59$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$z_*$	1090.013	$1090.24^{+0.40}_{-0.50}$	$\chi_{\text{DR11CMass}}^2$	2.414	$2.98 \pm 0.78$
$c_{217}$	0.99593	$0.9961 \pm 0.0015$	$r_*$	143.95	$142.4^{+2.4}_{-1.2}$	$\chi_{\text{DR11LOWZ}}^2$	0.427	$0.73 \pm 0.64$
$H_0$	68.28	$68.86^{+0.89}_{-1.5}$	$100\theta_*$	1.04105	$1.04071^{+0.00066}_{-0.00054}$	$\chi_{\text{prior}}^2$	2.02	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6928	$0.6911 \pm 0.0083$	$D_A/\text{Gpc}$	13.828	$13.69^{+0.22}_{-0.11}$	$\chi_{\text{CMB}}^2$	11260.0	$11276.5 \pm 5.8$
$\Omega_m$	0.3072	$0.3089 \pm 0.0083$	$z_{\text{drag}}$	1060.05	$1060.65^{+0.67}_{-0.92}$	$\chi_{\text{BAO}}^2$	4.32	$5.2 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 11266.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11289.58$ ;  $R - 1 = 0.01576$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.13 plik\_dx11dr2\_HM\_v18\_TT: 763.91  
Hubble - H070p6: 0.48

## 12.7 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022401	$0.02252 \pm 0.00024$	$\Omega_\nu h^2$	0.00065	$0.00260^{+0.00057}_{-0.0022}$	$100\theta_D$	0.16107	$0.16142^{+0.00044}_{-0.00066}$
$\Omega_c h^2$	0.12007	$0.1212 \pm 0.0042$	$\Omega_m h^3$	0.09797	$0.1009^{+0.0023}_{-0.0052}$	$z_{\text{eq}}$	3361.9	$3313^{+57}_{-35}$
$100\theta_{\text{MC}}$	1.04093	$1.04069^{+0.00056}_{-0.00050}$	$\sigma_8$	0.8359	$0.815^{+0.030}_{-0.025}$	$k_{\text{eq}}$	0.010326	$0.01031^{+0.00019}_{-0.00014}$
$\tau$	0.0850	$0.091 \pm 0.020$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.452^{+0.016}_{-0.013}$	$100\theta_{\text{eq}}$	0.8207	$0.8311^{+0.0067}_{-0.012}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.209$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.607^{+0.022}_{-0.017}$	$100\theta_{\text{s,eq}}$	0.45324	$0.4586^{+0.0034}_{-0.0064}$
$N_{\text{eff}}$	3.140	$< 3.40$	$\sigma_8/h^{0.5}$	1.0103	$0.981^{+0.035}_{-0.026}$	$r_{\text{drag}}/D_V(0.57)$	0.071903	$0.07173 \pm 0.00045$
$\ln(10^{10} A_s)$	3.1056	$3.121 \pm 0.042$	$\langle d^2 \rangle^{1/2}$	2.4899	$2.483 \pm 0.045$	$H(0.57)$	93.78	$94.63^{+0.80}_{-1.7}$
$n_s$	0.9724	$0.9777^{+0.0078}_{-0.011}$	$z_{\text{re}}$	10.59	$11.1 \pm 1.8$	$D_A(0.57)$	1373.3	$1363^{+26}_{-15}$
$y_{\text{cal}}$	1.00056	$1.0004 \pm 0.0025$	$10^9 A_s$	2.232	$2.269^{+0.090}_{-0.10}$	$F_{\text{AP}}(0.57)$	0.67448	$0.6751 \pm 0.0020$
$A_{217}^{\text{CIB}}$	66.3	$65.1 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8833	$1.890^{+0.016}_{-0.021}$	$f\sigma_8(0.57)$	0.4844	$0.474^{+0.017}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.11	—	$D_{40}$	1227.8	$1221 \pm 17$	$\sigma_8(0.57)$	0.6233	$0.607^{+0.023}_{-0.019}$
$A_{143}^{\text{tSZ}}$	7.05	$4.9 \pm 2.0$	$D_{220}$	5720.5	$5723 \pm 41$	$f_{2000}^{143}$	29.44	$31.6 \pm 3.2$
$A_{100}^{\text{PS}}$	252.3	$263 \pm 29$	$D_{810}$	2537.1	$2537 \pm 14$	$f_{2000}^{143 \times 217}$	32.19	$33.7 \pm 2.4$
$A_{143}^{\text{PS}}$	40.4	$46 \pm 8$	$D_{1420}$	815.7	$813.7 \pm 5.1$	$f_{2000}^{217}$	105.87	$107.2 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	35.5	$39^{+10}_{-10}$	$D_{2000}$	230.70	$229.2 \pm 2.1$	$\chi_{\text{lowTEB}}^2$	10496.07	$10496.8 \pm 3.0$
$A_{217}^{\text{PS}}$	98.8	$97 \pm 10$	$n_{\text{s},0.002}$	0.9724	$0.9777^{+0.0078}_{-0.011}$	$\chi_{\text{plik}}^2$	764.1	$779.8 \pm 6.2$
$A^{\text{kSZ}}$	0.00	$< 5.37$	$Y_{\text{P}}$	0.24668	$0.2491^{+0.0016}_{-0.0036}$	$\chi_{\text{H070p6}}^2$	0.417	$0.37 \pm 0.32$
$A_{100}^{\text{dustTT}}$	7.45	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24801	$0.2504^{+0.0016}_{-0.0037}$	$\chi_{\text{JLA}}^2$	706.601	$706.71 \pm 0.20$
$A_{143}^{\text{dustTT}}$	9.08	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.618	$2.658^{+0.053}_{-0.073}$	$\chi_{6\text{DF}}^2$	0.00099	$0.056 \pm 0.077$
$A_{143 \times 217}^{\text{dustTT}}$	17.85	$17.3 \pm 4.1$	$\text{Age}/\text{Gyr}$	13.697	$13.57^{+0.24}_{-0.11}$	$\chi_{\text{MGS}}^2$	1.61	$1.46 \pm 0.59$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.4$	$z_*$	1089.979	$1090.23^{+0.40}_{-0.50}$	$\chi_{\text{DR11CMass}}^2$	2.444	$2.94 \pm 0.71$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$r_*$	143.92	$142.4^{+2.4}_{-1.2}$	$\chi_{\text{DR11LOWZ}}^2$	0.325	$0.66 \pm 0.59$
$c_{217}$	0.99594	$0.9960 \pm 0.0015$	$100\theta_*$	1.04105	$1.04072^{+0.00067}_{-0.00055}$	$\chi_{\text{prior}}^2$	1.99	$7.4 \pm 3.6$
$H_0$	68.45	$68.94^{+0.89}_{-1.5}$	$D_A/\text{Gpc}$	13.825	$13.69^{+0.22}_{-0.11}$	$\chi_{\text{CMB}}^2$	11260.1	$11276.6 \pm 5.8$
$\Omega_\Lambda$	0.6946	$0.6919 \pm 0.0080$	$z_{\text{drag}}$	1060.09	$1060.67^{+0.67}_{-0.92}$	$\chi_{\text{BAO}}^2$	4.38	$5.1 \pm 1.1$
$\Omega_m$	0.3054	$0.3081 \pm 0.0080$	$r_{\text{drag}}$	146.57	$145.0^{+2.5}_{-1.2}$			
$\Omega_m h^2$	0.14312	$0.1464^{+0.0026}_{-0.0047}$	$k_D$	0.14108	$0.14223^{+0.00099}_{-0.0018}$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.54$ ;  $\bar{\chi}_{\text{eff}}^2 = 11996.22$ ;  $R - 1 = 0.01599$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.33 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.07 plik\_dx11dr2\_HM\_v18\_TT: 764.07  
Hubble - H070p6: 0.42 SN - JLA December\_2013: 706.60

## 12.8 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022257	$0.02241^{+0.00015}_{-0.00018}$	$A_{143}^{\text{dustTE}}$	0.154	$0.154 \pm 0.053$	$r_*$	144.61	$143.6^{+1.2}_{-0.48}$
$\Omega_c h^2$	0.11623	$0.1190^{+0.0039}_{-0.0024}$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.337 \pm 0.079$	$100\theta_*$	1.040975	$1.04083^{+0.00043}_{-0.00033}$
$100\theta_{\text{MC}}$	1.040774	$1.04071^{+0.00038}_{-0.00032}$	$A_{217}^{\text{dustTE}}$	1.666	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.892	$13.80^{+0.11}_{-0.045}$
$\tau$	0.0785	$0.087 \pm 0.017$	$c_{100}$	0.99823	$0.99814 \pm 0.00077$	$z_{\text{drag}}$	1059.666	$1060.19^{+0.38}_{-0.57}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.321	$< 0.241$	$c_{217}$	0.99596	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.31	$146.3^{+1.3}_{-0.50}$
$N_{\text{eff}}$	3.049	$< 3.19$	$H_0$	67.34	$67.87^{+0.51}_{-0.86}$	$k_D$	0.14055	$0.14137^{+0.00046}_{-0.00099}$
$\ln(10^{10} A_s)$	3.0924	$3.111 \pm 0.035$	$\Omega_\Lambda$	0.6857	$0.6865 \pm 0.0072$	$100\theta_D$	0.160907	$0.16104^{+0.00020}_{-0.00034}$
$n_s$	0.9647	$0.9697^{+0.0053}_{-0.0070}$	$\Omega_m$	0.3143	$0.3135 \pm 0.0072$	$z_{\text{eq}}$	3308.2	$3325^{+69}_{-25}$
$y_{\text{cal}}$	1.00075	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14254	$0.1444^{+0.0014}_{-0.0026}$	$k_{\text{eq}}$	0.010160	$0.01026^{+0.00020}_{-0.00099}$
$A_{217}^{\text{CIB}}$	66.3	$64.2 \pm 6.6$	$\Omega_\nu h^2$	0.00406	$0.00300^{+0.00030}_{-0.0029}$	$100\theta_{\text{eq}}$	0.8322	$0.8289^{+0.0048}_{-0.015}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.17	—	$\Omega_m h^3$	0.09599	$0.09801^{+0.00076}_{-0.0024}$	$100\theta_{s, \text{eq}}$	0.4594	$0.4576^{+0.0024}_{-0.0077}$
$A_{143}^{\text{tSZ}}$	7.09	$5.3 \pm 1.9$	$\sigma_8$	0.8274	$0.812^{+0.029}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.071415	$0.07144 \pm 0.00039$
$A_{100}^{\text{PS}}$	256.1	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.454^{+0.016}_{-0.011}$	$H(0.57)$	92.89	$93.56^{+0.29}_{-0.83}$
$A_{143}^{\text{PS}}$	41.1	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6195	$0.607^{+0.021}_{-0.015}$	$D_A(0.57)$	1391.2	$1381^{+14}_{-7.1}$
$A_{143 \times 217}^{\text{PS}}$	37.5	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0082	$0.985^{+0.034}_{-0.023}$	$F_{\text{AP}}(0.57)$	0.67675	$0.6765 \pm 0.0018$
$A_{217}^{\text{PS}}$	99.0	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5091	$2.504 \pm 0.039$	$f\sigma_8(0.57)$	0.4818	$0.473^{+0.017}_{-0.012}$
$A^{\text{kSZ}}$	0.01	$< 4.30$	$z_{\text{re}}$	10.02	$10.8^{+1.7}_{-1.5}$	$\sigma_8(0.57)$	0.6148	$0.603^{+0.022}_{-0.016}$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$10^9 A_s$	2.203	$2.246^{+0.076}_{-0.085}$	$f_{2000}^{143}$	29.29	$30.0 \pm 2.7$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8829	$1.885^{+0.012}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.23	$32.6 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.69	$17.0 \pm 4.1$	$D_{40}$	1240.8	$1234 \pm 14$	$f_{2000}^{217}$	105.82	$106.2 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.0	$81.6 \pm 7.4$	$D_{220}$	5733.3	$5730 \pm 38$	$\chi_{\text{lowTEB}}^2$	10496.90	$10497.7 \pm 2.6$
$A_{100}^{\text{dustEE}}$	0.0814	$0.0816 \pm 0.0056$	$D_{810}$	2537.4	$2536 \pm 14$	$\chi_{\text{plik}}^2$	2431.3	$2452.3 \pm 7.1$
$A_{100 \times 143}^{\text{dustEE}}$	0.04888	$0.0492 \pm 0.0050$	$D_{1420}$	815.02	$814.3 \pm 4.8$	$\chi_{6\text{DF}}^2$	0.069	$0.096 \pm 0.10$
$A_{100 \times 217}^{\text{dustEE}}$	0.0990	$0.099 \pm 0.033$	$D_{2000}$	230.69	$229.9 \pm 1.6$	$\chi_{\text{MGS}}^2$	0.982	$1.08 \pm 0.46$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1006 \pm 0.0069$	$n_{s, 0.002}$	0.9647	$0.9697^{+0.0053}_{-0.0070}$	$\chi_{\text{DR11CMass}}^2$	2.77	$3.13 \pm 0.91$
$A_{143 \times 217}^{\text{dustEE}}$	0.2230	$0.223 \pm 0.047$	$Y_P$	0.24538	$0.24701^{+0.00057}_{-0.0017}$	$\chi_{\text{DR11LOWZ}}^2$	0.99	$1.06 \pm 0.69$
$A_{217}^{\text{dustEE}}$	0.651	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.24671	$0.24834^{+0.00057}_{-0.0017}$	$\chi_{\text{prior}}^2$	6.9	$19.5 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1405	$0.141 \pm 0.038$	$10^5 D/H$	2.6135	$2.625^{+0.029}_{-0.039}$	$\chi_{\text{CMB}}^2$	12928.2	$12950.0 \pm 6.8$
$A_{100 \times 143}^{\text{dustTE}}$	0.1312	$0.132 \pm 0.029$	$\text{Age/Gyr}$	13.811	$13.72^{+0.12}_{-0.037}$	$\chi_{\text{BAO}}^2$	4.81	$5.4 \pm 1.3$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.303 \pm 0.084$	$z_*$	1090.032	$1090.08^{+0.25}_{-0.30}$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.92$ ;  $\Delta\chi_{\text{eff}}^2 = -0.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 12974.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.40$ ;  $R - 1 = 0.01245$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.07 ( $\Delta$  0.04) MGS: 0.98 ( $\Delta$  -0.24) DR11CMass: 2.77 ( $\Delta$  0.27) DR11LOWZ: 0.99 ( $\Delta$  0.31) CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.90

( $\Delta$  -0.51) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.29 ( $\Delta$  -0.25)

## 12.9 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022353	$0.02243^{+0.00015}_{-0.00018}$	$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.053$	$r_*$	144.47	$143.6^{+1.3}_{-0.53}$
$\Omega_c h^2$	0.11939	$0.1192^{+0.0040}_{-0.0025}$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.337 \pm 0.080$	$100\theta_*$	1.041049	$1.04082^{+0.00045}_{-0.00034}$
$100\theta_{MC}$	1.040887	$1.04070^{+0.00039}_{-0.00033}$	$A_{217}^{\text{dust}TE}$	1.667	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.877	$13.79^{+0.12}_{-0.050}$
$\tau$	0.0836	$0.088 \pm 0.017$	$c_{100}$	0.99821	$0.99814 \pm 0.00077$	$z_{\text{drag}}$	1059.856	$1060.24^{+0.39}_{-0.59}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.223$	$c_{217}$	0.99582	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	147.14	$146.2^{+1.4}_{-0.55}$
$N_{\text{eff}}$	3.073	$< 3.20$	$H_0$	67.85	$67.99^{+0.54}_{-0.90}$	$k_D$	0.14070	$0.14144^{+0.00050}_{-0.0011}$
$\ln(10^{10} A_s)$	3.1016	$3.113 \pm 0.035$	$\Omega_\Lambda$	0.6907	$0.6874 \pm 0.0071$	$100\theta_D$	0.160896	$0.16105^{+0.00021}_{-0.00036}$
$n_s$	0.9688	$0.9705^{+0.0054}_{-0.0072}$	$\Omega_m$	0.3093	$0.3126 \pm 0.0071$	$z_{\text{eq}}$	3375.1	$3325^{+66}_{-24}$
$y_{\text{cal}}$	1.00047	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14240	$0.1445^{+0.0015}_{-0.0028}$	$k_{\text{eq}}$	0.010320	$0.01027^{+0.00020}_{-0.00010}$
$A_{217}^{\text{CIB}}$	64.2	$64.2 \pm 6.6$	$\Omega_\nu h^2$	0.00065	$0.00287^{+0.00024}_{-0.0028}$	$100\theta_{\text{eq}}$	0.8181	$0.8289^{+0.0045}_{-0.014}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.38	—	$\Omega_m h^3$	0.09661	$0.09824^{+0.00089}_{-0.0026}$	$100\theta_{s, \text{eq}}$	0.45190	$0.4575^{+0.0023}_{-0.0074}$
$A_{143}^{\text{tSZ}}$	7.04	$5.3 \pm 1.9$	$\sigma_8$	0.8330	$0.813^{+0.029}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.071687	$0.07149 \pm 0.00039$
$A_{100}^{\text{PS}}$	251.2	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4633	$0.455^{+0.016}_{-0.011}$	$H(0.57)$	93.23	$93.66^{+0.33}_{-0.91}$
$A_{143}^{\text{PS}}$	43.5	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6212	$0.608^{+0.021}_{-0.015}$	$D_A(0.57)$	1383.5	$1379^{+15}_{-7.6}$
$A_{143 \times 217}^{\text{PS}}$	43.6	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0112	$0.986^{+0.034}_{-0.022}$	$F_{\text{AP}}(0.57)$	0.67548	$0.6763 \pm 0.0018$
$A_{217}^{\text{PS}}$	102.1	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4978	$2.503 \pm 0.039$	$f\sigma_8(0.57)$	0.4837	$0.474^{+0.017}_{-0.012}$
$A^{\text{kSZ}}$	0.01	$< 4.31$	$z_{\text{re}}$	10.45	$10.9^{+1.7}_{-1.5}$	$\sigma_8(0.57)$	0.6202	$0.605^{+0.022}_{-0.016}$
$A_{100}^{\text{dust}TT}$	7.41	$7.5 \pm 1.9$	$10^9 A_s$	2.223	$2.250^{+0.076}_{-0.086}$	$f_{2000}^{143}$	28.49	$30.0 \pm 2.7$
$A_{143}^{\text{dust}TT}$	9.01	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8810	$1.885^{+0.012}_{-0.015}$	$f_{2000}^{143 \times 217}$	31.72	$32.6 \pm 2.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.86	$17.0 \pm 4.1$	$D_{40}$	1233.7	$1233 \pm 14$	$f_{2000}^{217}$	105.21	$106.2 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.2	$81.6 \pm 7.4$	$D_{220}$	5727.0	$5730 \pm 38$	$\chi_{\text{lowTEB}}^2$	10496.60	$10497.7 \pm 2.6$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0816 \pm 0.0056$	$D_{810}$	2537.6	$2536 \pm 14$	$\chi_{\text{plik}}^2$	2432.5	$2452.5 \pm 7.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.04935	$0.0493 \pm 0.0050$	$D_{1420}$	816.20	$814.3 \pm 4.8$	$\chi_{\text{H070p6}}^2$	0.684	$0.66 \pm 0.33$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.099 \pm 0.033$	$D_{2000}$	231.09	$229.9 \pm 1.7$	$\chi_{6\text{DF}}^2$	0.0180	$0.085 \pm 0.096$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1006 \pm 0.0069$	$n_{s, 0.002}$	0.9688	$0.9705^{+0.0054}_{-0.0072}$	$\chi_{\text{MGS}}^2$	1.343	$1.14 \pm 0.47$
$A_{143 \times 217}^{\text{dust}EE}$	0.2220	$0.223 \pm 0.047$	$Y_P$	0.24575	$0.24716^{+0.00066}_{-0.0019}$	$\chi_{\text{DR11CMass}}^2$	2.44	$3.05 \pm 0.83$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.24708	$0.24850^{+0.00066}_{-0.0019}$	$\chi_{\text{DR11LOWZ}}^2$	0.57	$0.98 \pm 0.66$
$A_{100}^{\text{dust}TE}$	0.1408	$0.141 \pm 0.038$	$10^5 \text{D/H}$	2.6039	$2.626^{+0.029}_{-0.041}$	$\chi_{\text{prior}}^2$	6.9	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1307	$0.132 \pm 0.029$	Age/Gyr	13.770	$13.70^{+0.13}_{-0.044}$	$\chi_{\text{CMB}}^2$	12929.1	$12950.1 \pm 6.9$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.304 \pm 0.084$	$z_*$	1089.917	$1090.07^{+0.26}_{-0.31}$	$\chi_{\text{BAO}}^2$	4.38	$5.3 \pm 1.2$

Best-fit  $\chi^2_{\text{eff}} = 12941.08$ ;  $\bar{\chi}^2_{\text{eff}} = 12975.57$ ;  $R - 1 = 0.01234$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 MGS: 1.34 DR11CMASS: 2.44 DR11LOWZ: 0.57 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.60 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2432.48 Hubble - H070p6: 0.68



# 12.10 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022329	$0.02243^{+0.00015}_{-0.00018}$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.337 \pm 0.080$	$D_A/\text{Gpc}$	13.895	$13.79^{+0.13}_{-0.050}$
$\Omega_c h^2$	0.11664	$0.1191^{+0.0040}_{-0.0025}$	$A_{217}^{\text{dustTE}}$	1.662	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.780	$1060.26^{+0.39}_{-0.59}$
$100\theta_{\text{MC}}$	1.040850	$1.04071^{+0.00040}_{-0.00033}$	$c_{100}$	0.99820	$0.99814 \pm 0.00077$	$r_{\text{drag}}$	147.34	$146.2^{+1.4}_{-0.55}$
$\tau$	0.0776	$0.089 \pm 0.017$	$c_{217}$	0.99604	$0.9960 \pm 0.0015$	$k_D$	0.14058	$0.14143^{+0.00050}_{-0.0011}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.246	$< 0.215$	$H_0$	67.56	$68.05^{+0.54}_{-0.91}$	$100\theta_D$	0.160829	$0.16105^{+0.00021}_{-0.00037}$
$N_{\text{eff}}$	3.048	$< 3.21$	$\Omega_\Lambda$	0.6884	$0.6882 \pm 0.0070$	$z_{\text{eq}}$	3320.0	$3324^{+66}_{-23}$
$\ln(10^{10} A_s)$	3.0885	$3.114 \pm 0.035$	$\Omega_m$	0.3116	$0.3118 \pm 0.0070$	$k_{\text{eq}}$	0.010181	$0.01026^{+0.00020}_{-0.00010}$
$n_s$	0.9658	$0.9707^{+0.0054}_{-0.0072}$	$\Omega_m h^2$	0.14223	$0.1444^{+0.0015}_{-0.0028}$	$100\theta_{\text{eq}}$	0.8298	$0.8292^{+0.0044}_{-0.014}$
$y_{\text{cal}}$	1.00009	$1.0004 \pm 0.0025$	$\Omega_\nu h^2$	0.00326	$0.00283^{+0.00018}_{-0.0028}$	$100\theta_{s, \text{eq}}$	0.45807	$0.4577^{+0.0022}_{-0.0074}$
$A_{217}^{\text{CIB}}$	66.5	$64.2 \pm 6.6$	$\Omega_m h^3$	0.09609	$0.09827^{+0.00090}_{-0.0027}$	$r_{\text{drag}}/D_V(0.57)$	0.071561	$0.07153 \pm 0.00038$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.8252	$0.814^{+0.029}_{-0.021}$	$H(0.57)$	93.00	$93.69^{+0.33}_{-0.92}$
$A_{143}^{\text{tSZ}}$	7.17	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4606	$0.455^{+0.016}_{-0.011}$	$D_A(0.57)$	1388.1	$1378^{+16}_{-7.6}$
$A_{100}^{\text{PS}}$	254.8	$261 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6165	$0.608^{+0.021}_{-0.015}$	$F_{\text{AP}}(0.57)$	0.67605	$0.6761 \pm 0.0018$
$A_{143}^{\text{PS}}$	39.6	$44 \pm 8$	$\sigma_8/h^{0.5}$	1.0039	$0.987^{+0.033}_{-0.022}$	$f\sigma_8(0.57)$	0.4798	$0.474^{+0.017}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	35.6	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4959	$2.503 \pm 0.039$	$\sigma_8(0.57)$	0.6138	$0.606^{+0.022}_{-0.016}$
$A_{217}^{\text{PS}}$	97.9	$98 \pm 10$	$z_{\text{re}}$	9.92	$10.9^{+1.7}_{-1.5}$	$f_{2000}^{143}$	29.00	$30.0 \pm 2.7$
$A^{\text{kSZ}}$	0.00	$< 4.29$	$10^9 A_s$	2.194	$2.252^{+0.076}_{-0.086}$	$f_{2000}^{143 \times 217}$	31.91	$32.6 \pm 2.0$
$A_{100}^{\text{dustTT}}$	7.41	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8788	$1.885^{+0.012}_{-0.015}$	$f_{2000}^{217}$	105.51	$106.2 \pm 1.9$
$A_{143}^{\text{dustTT}}$	8.99	$9.0 \pm 1.8$	$D_{40}$	1236.7	$1233 \pm 14$	$\chi_{\text{lowTEB}}^2$	10496.55	$10497.6 \pm 2.6$
$A_{143 \times 217}^{\text{dustTT}}$	17.62	$17.0 \pm 4.1$	$D_{220}$	5730.8	$5731 \pm 38$	$\chi_{\text{plik}}^2$	2431.9	$2452.5 \pm 7.1$
$A_{217}^{\text{dustTT}}$	81.9	$81.5 \pm 7.4$	$D_{810}$	2534.5	$2536 \pm 14$	$\chi_{\text{H070p6}}^2$	0.834	$0.64 \pm 0.32$
$A_{100}^{\text{dustEE}}$	0.0814	$0.0817 \pm 0.0056$	$D_{1420}$	814.71	$814.4 \pm 4.8$	$\chi_{\text{JLA}}^2$	706.751	$706.80 \pm 0.22$
$A_{100 \times 143}^{\text{dustEE}}$	0.04904	$0.0493 \pm 0.0050$	$D_{2000}$	230.65	$230.0 \pm 1.7$	$\chi_{6\text{DF}}^2$	0.0374	$0.075 \pm 0.087$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.099 \pm 0.033$	$n_{s, 0.002}$	0.9658	$0.9707^{+0.0054}_{-0.0072}$	$\chi_{\text{MGS}}^2$	1.156	$1.19 \pm 0.47$
$A_{143}^{\text{dustEE}}$	0.1005	$0.1007 \pm 0.0069$	$Y_P$	0.24540	$0.24718^{+0.00067}_{-0.0019}$	$\chi_{\text{DR11CMass}}^2$	2.547	$2.97 \pm 0.74$
$A_{143 \times 217}^{\text{dustEE}}$	0.2231	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.24673	$0.24851^{+0.00067}_{-0.0019}$	$\chi_{\text{DR11LOWZ}}^2$	0.75	$0.91 \pm 0.62$
$A_{217}^{\text{dustEE}}$	0.654	$0.65 \pm 0.13$	$10^5 D/H$	2.5998	$2.625^{+0.029}_{-0.041}$	$\chi_{\text{prior}}^2$	6.9	$19.6 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1395	$0.141 \pm 0.038$	Age/Gyr	13.800	$13.70^{+0.13}_{-0.045}$	$\chi_{\text{CMB}}^2$	12928.5	$12950.1 \pm 6.9$
$A_{100 \times 143}^{\text{dustTE}}$	0.1313	$0.132 \pm 0.029$	$z_*$	1089.907	$1090.05^{+0.26}_{-0.31}$	$\chi_{\text{BAO}}^2$	4.49	$5.1 \pm 1.1$
$A_{100 \times 217}^{\text{dustTE}}$	0.303	$0.304 \pm 0.084$	$r_*$	144.66	$143.6^{+1.4}_{-0.53}$			
$A_{143}^{\text{dustTE}}$	0.155	$0.154 \pm 0.053$	$100\theta_*$	1.041040	$1.04082^{+0.00046}_{-0.00034}$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.45$ ;  $\bar{\chi}_{\text{eff}}^2 = 13682.29$ ;  $R - 1 = 0.01225$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.04 MGS: 1.16 DR11CMASS: 2.55 DR11LOWZ: 0.75 CMB - lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10496.55 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.91 Hubble - H070p6: 0.83 SN - JLA December\_2013: 706.75

## 12.11 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022285	$0.02247^{+0.00023}_{-0.00026}$	$\Omega_m h^2$	0.14213	$0.1459^{+0.0024}_{-0.0043}$	$r_{\text{drag}}$	147.26	$145.3^{+2.3}_{-1.1}$
$\Omega_c h^2$	0.11900	$0.1207 \pm 0.0038$	$\Omega_\nu h^2$	0.00085	$0.00274^{+0.00072}_{-0.0021}$	$k_D$	0.14050	$0.14199^{+0.00091}_{-0.0017}$
$100\theta_{\text{MC}}$	1.04096	$1.04075^{+0.00055}_{-0.00049}$	$\Omega_m h^3$	0.09650	$0.1004^{+0.0020}_{-0.0047}$	$100\theta_D$	0.16103	$0.16143^{+0.00040}_{-0.00060}$
$\tau$	0.0679	$0.079^{+0.016}_{-0.019}$	$\sigma_8$	0.8137	$0.800^{+0.024}_{-0.017}$	$z_{\text{eq}}$	3360.7	$3308^{+52}_{-36}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.019	$< 0.230$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.444^{+0.012}_{-0.0087}$	$k_{\text{eq}}$	0.010282	$0.01029^{+0.00017}_{-0.00013}$
$N_{\text{eff}}$	3.080	$< 3.37$	$\sigma_8 \Omega_m^{0.25}$	0.6063	$0.596^{+0.017}_{-0.011}$	$100\theta_{\text{eq}}$	0.8207	$0.8319^{+0.0070}_{-0.011}$
$\ln(10^{10} A_s)$	3.0673	$3.095^{+0.032}_{-0.039}$	$\sigma_8/h^{0.5}$	0.9875	$0.965^{+0.027}_{-0.017}$	$100\theta_{s, \text{eq}}$	0.45330	$0.4591^{+0.0036}_{-0.0058}$
$n_s$	0.9693	$0.9768^{+0.0076}_{-0.011}$	$\langle d^2 \rangle^{1/2}$	2.4489	$2.451 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071763	$0.07171 \pm 0.00047$
$y_{\text{cal}}$	1.00006	$1.0003 \pm 0.0025$	$z_{\text{re}}$	9.03	$10.0 \pm 1.6$	$H(0.57)$	93.23	$94.45^{+0.72}_{-1.6}$
$A_{217}^{\text{CIB}}$	67.7	$65.7 \pm 6.7$	$10^9 A_s$	2.148	$2.210^{+0.069}_{-0.089}$	$D_A(0.57)$	1383.0	$1365^{+25}_{-14}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8754	$1.887^{+0.014}_{-0.019}$	$F_{\text{AP}}(0.57)$	0.67521	$0.6753 \pm 0.0021$
$A_{143}^{\text{tSZ}}$	7.20	$4.8 \pm 2.0$	$D_{40}$	1222.7	$1215^{+16}_{-15}$	$f\sigma_8(0.57)$	0.4724	$0.465^{+0.013}_{-0.0090}$
$A_{100}^{\text{PS}}$	254.0	$265 \pm 28$	$D_{220}$	5713.5	$5721 \pm 40$	$\sigma_8(0.57)$	0.6061	$0.596^{+0.019}_{-0.014}$
$A_{143}^{\text{PS}}$	39.7	$47 \pm 8$	$D_{810}$	2533.0	$2535 \pm 14$	$f_{2000}^{143}$	30.21	$32.2 \pm 3.1$
$A_{143 \times 217}^{\text{PS}}$	33.0	$39^{+9}_{-10}$	$D_{1420}$	814.5	$813.4 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.79	$34.2 \pm 2.2$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$D_{2000}$	230.00	$228.8 \pm 2.0$	$f_{2000}^{217}$	106.27	$107.6 \pm 2.1$
$A^{\text{kSZ}}$	0.01	$< 5.69$	$n_{s, 0.002}$	0.9693	$0.9768^{+0.0076}_{-0.011}$	$\chi^2_{\text{lensing}}$	9.19	$9.7 \pm 1.4$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24582	$0.2488^{+0.0015}_{-0.0034}$	$\chi^2_{\text{lowTEB}}$	10494.76	$10495.1 \pm 1.5$
$A_{143}^{\text{dustTT}}$	9.09	$9.1 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24715	$0.2502^{+0.0015}_{-0.0034}$	$\chi^2_{\text{plik}}$	766.3	$781.5 \pm 5.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.83	$17.3 \pm 4.2$	$10^5 D/H$	2.619	$2.661^{+0.051}_{-0.066}$	$\chi^2_{6\text{DF}}$	0.0102	$0.063 \pm 0.086$
$A_{217}^{\text{dustTT}}$	82.2	$81.6 \pm 7.4$	Age/Gyr	13.773	$13.60^{+0.22}_{-0.098}$	$\chi^2_{\text{MGS}}$	1.41	$1.44 \pm 0.61$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$z_*$	1089.984	$1090.24^{+0.38}_{-0.45}$	$\chi^2_{\text{DR11CMASS}}$	2.407	$2.98 \pm 0.80$
$c_{217}$	0.99603	$0.9961 \pm 0.0015$	$r_*$	144.57	$142.7^{+2.2}_{-1.0}$	$\chi^2_{\text{DR11LOWZ}}$	0.481	$0.70 \pm 0.64$
$H_0$	67.90	$68.78^{+0.83}_{-1.4}$	$100\theta_*$	1.04114	$1.04079^{+0.00065}_{-0.00052}$	$\chi^2_{\text{prior}}$	2.07	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.6917	$0.6914 \pm 0.0084$	$D_A/\text{Gpc}$	13.886	$13.71^{+0.21}_{-0.098}$	$\chi^2_{\text{CMB}}$	11270.3	$11286.3 \pm 5.8$
$\Omega_m$	0.3083	$0.3086 \pm 0.0084$	$z_{\text{drag}}$	1059.70	$1060.51^{+0.65}_{-0.91}$	$\chi^2_{\text{BAO}}$	4.31	$5.2 \pm 1.2$

Best-fit  $\chi^2_{\text{eff}} = 11276.65$ ;  $\Delta\chi^2_{\text{eff}} = -0.09$ ;  $\bar{\chi}^2_{\text{eff}} = 11298.94$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.25$ ;  $R - 1 = 0.00736$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMASS: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.19 ( $\Delta$  -0.05) lowl\_SMW\_70\_dx11d.2014.10.03: 10494.76 ( $\Delta$  -0.10) plik\_dx11dr2\_HM\_v18-TT: 766.32 ( $\Delta$  0.12)

## 12.12 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022350	$0.02249^{+0.00023}_{-0.00026}$	$\Omega_\nu h^2$	0.00094	$0.00267^{+0.00071}_{-0.0020}$	$100\theta_D$	0.16109	$0.16147^{+0.00043}_{-0.00061}$
$\Omega_c h^2$	0.11916	$0.1210 \pm 0.0038$	$\Omega_m h^3$	0.09726	$0.1008^{+0.0022}_{-0.0049}$	$z_{\text{eq}}$	3348.0	$3307^{+50}_{-35}$
$100\theta_{\text{MC}}$	1.04095	$1.04073 \pm 0.00051$	$\sigma_8$	0.8149	$0.801^{+0.023}_{-0.017}$	$k_{\text{eq}}$	0.010270	$0.01029^{+0.00016}_{-0.00013}$
$\tau$	0.0720	$0.080^{+0.016}_{-0.019}$	$\sigma_8 \Omega_m^{0.5}$	0.4504	$0.444^{+0.012}_{-0.0086}$	$100\theta_{\text{eq}}$	0.8232	$0.8322^{+0.0068}_{-0.011}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.028	$< 0.223$	$\sigma_8 \Omega_m^{0.25}$	0.6058	$0.597^{+0.016}_{-0.011}$	$100\theta_{\text{s,eq}}$	0.45458	$0.4592^{+0.0035}_{-0.0056}$
$N_{\text{eff}}$	3.121	$< 3.40$	$\sigma_8/h^{0.5}$	0.9861	$0.965^{+0.026}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.071909	$0.07176 \pm 0.00046$
$\ln(10^{10} A_s)$	3.0759	$3.098^{+0.033}_{-0.039}$	$\langle d^2 \rangle^{1/2}$	2.4475	$2.450 \pm 0.027$	$H(0.57)$	93.55	$94.61^{+0.79}_{-1.6}$
$n_s$	0.9718	$0.9779^{+0.0079}_{-0.011}$	$z_{\text{re}}$	9.40	$10.2 \pm 1.6$	$D_A(0.57)$	1376.7	$1363^{+24}_{-15}$
$y_{\text{cal}}$	1.00010	$1.0003 \pm 0.0025$	$10^9 A_s$	2.167	$2.218^{+0.070}_{-0.088}$	$F_{\text{AP}}(0.57)$	0.67451	$0.6750 \pm 0.0021$
$A_{217}^{\text{CIB}}$	67.9	$65.8 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8765	$1.888^{+0.015}_{-0.019}$	$f\sigma_8(0.57)$	0.4725	$0.466^{+0.013}_{-0.0088}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1219.8	$1214 \pm 15$	$\sigma_8(0.57)$	0.6077	$0.598^{+0.018}_{-0.014}$
$A_{143}^{\text{tSZ}}$	7.15	$4.7 \pm 2.0$	$D_{220}$	5716.3	$5721 \pm 40$	$f_{2000}^{143}$	30.29	$32.3 \pm 3.1$
$A_{100}^{\text{PS}}$	254.8	$266 \pm 28$	$D_{810}$	2533.4	$2536 \pm 14$	$f_{2000}^{143 \times 217}$	32.83	$34.3 \pm 2.3$
$A_{143}^{\text{PS}}$	39.9	$47 \pm 8$	$D_{1420}$	814.7	$813.4 \pm 5.1$	$f_{2000}^{217}$	106.32	$107.6 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+9}_{-10}$	$D_{2000}$	229.98	$228.7 \pm 2.0$	$\chi_{\text{lensing}}^2$	9.11	$9.7 \pm 1.3$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$n_{\text{s},0.002}$	0.9718	$0.9779^{+0.0079}_{-0.011}$	$\chi_{\text{lowTEB}}^2$	10494.59	$10495.0 \pm 1.6$
$A^{\text{kSZ}}$	0.00	$< 5.75$	$Y_{\text{P}}$	0.24639	$0.2491^{+0.0016}_{-0.0035}$	$\chi_{\text{plik}}^2$	766.5	$781.6 \pm 5.8$
$A_{100}^{\text{dustTT}}$	7.55	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24772	$0.2504^{+0.0016}_{-0.0035}$	$\chi_{\text{H070p6}}^2$	0.488	$0.36 \pm 0.31$
$A_{143}^{\text{dustTT}}$	9.12	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.621	$2.664^{+0.053}_{-0.067}$	$\chi_{6\text{DF}}^2$	0.0009	$0.056 \pm 0.078$
$A_{143 \times 217}^{\text{dustTT}}$	17.82	$17.3 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.730	$13.58^{+0.22}_{-0.11}$	$\chi_{\text{MGS}}^2$	1.61	$1.50 \pm 0.61$
$A_{217}^{\text{dustTT}}$	82.0	$81.6 \pm 7.5$	$z_*$	1089.957	$1090.24^{+0.39}_{-0.46}$	$\chi_{\text{DR11CMass}}^2$	2.441	$2.95 \pm 0.75$
$c_{100}$	0.99789	$0.99789 \pm 0.00078$	$r_*$	144.28	$142.5^{+2.3}_{-1.2}$	$\chi_{\text{DR11LOWZ}}^2$	0.321	$0.64 \pm 0.59$
$c_{217}$	0.99603	$0.9961 \pm 0.0015$	$100\theta_*$	1.04110	$1.04076^{+0.00066}_{-0.00054}$	$\chi_{\text{prior}}^2$	2.15	$7.5 \pm 3.6$
$H_0$	68.28	$68.94^{+0.89}_{-1.4}$	$D_A/\text{Gpc}$	13.858	$13.69^{+0.21}_{-0.11}$	$\chi_{\text{CMB}}^2$	11270.2	$11286.4 \pm 5.8$
$\Omega_\Lambda$	0.6945	$0.6924 \pm 0.0082$	$z_{\text{drag}}$	1059.89	$1060.60^{+0.68}_{-0.90}$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.1$
$\Omega_m$	0.3055	$0.3076 \pm 0.0082$	$r_{\text{drag}}$	146.95	$145.1^{+2.4}_{-1.2}$			
$\Omega_m h^2$	0.14245	$0.1462^{+0.0026}_{-0.0045}$	$k_D$	0.14073	$0.14211^{+0.00098}_{-0.0017}$			

Best-fit  $\chi_{\text{eff}}^2 = 11277.24$ ;  $\bar{\chi}_{\text{eff}}^2 = 11299.34$ ;  $R - 1 = 0.00640$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.44 DR11LOWZ: 0.32 CMB - smica\_g30\_ftl\_full\_pp: 9.11 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.59 plik\_dx11dr2\_HM\_v18\_TT: 766.54 Hubble - H070p6: 0.49

### 12.13 base\_nnu\_meffsterile\_plikHM\_TT\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022345	$0.02250^{+0.00023}_{-0.00026}$	$\Omega_\nu h^2$	0.00085	$0.00263^{+0.00069}_{-0.0019}$	$100\theta_D$	0.16108	$0.16147^{+0.00043}_{-0.00061}$
$\Omega_c h^2$	0.11923	$0.1210 \pm 0.0038$	$\Omega_m h^3$	0.09724	$0.1009^{+0.0022}_{-0.0049}$	$z_{\text{eq}}$	3351.9	$3305^{+50}_{-35}$
$100\theta_{\text{MC}}$	1.04098	$1.04073 \pm 0.00051$	$\sigma_8$	0.8160	$0.802^{+0.023}_{-0.017}$	$k_{\text{eq}}$	0.010279	$0.01029^{+0.00016}_{-0.00013}$
$\tau$	0.0705	$0.081^{+0.016}_{-0.019}$	$\sigma_8 \Omega_m^{0.5}$	0.4511	$0.444^{+0.012}_{-0.0085}$	$100\theta_{\text{eq}}$	0.8225	$0.8325^{+0.0067}_{-0.011}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.019	$< 0.218$	$\sigma_8 \Omega_m^{0.25}$	0.6067	$0.597^{+0.016}_{-0.011}$	$100\theta_{\text{s,eq}}$	0.45419	$0.4593^{+0.0034}_{-0.0055}$
$N_{\text{eff}}$	3.116	$< 3.40$	$\sigma_8/h^{0.5}$	0.9876	$0.966^{+0.026}_{-0.017}$	$r_{\text{drag}}/D_V(0.57)$	0.071908	$0.07180 \pm 0.00045$
$\ln(10^{10} A_s)$	3.0733	$3.099^{+0.032}_{-0.039}$	$\langle d^2 \rangle^{1/2}$	2.4466	$2.450 \pm 0.027$	$H(0.57)$	93.54	$94.65^{+0.80}_{-1.6}$
$n_s$	0.9715	$0.9782^{+0.0079}_{-0.011}$	$z_{\text{re}}$	9.26	$10.2 \pm 1.5$	$D_A(0.57)$	1376.9	$1362^{+24}_{-15}$
$y_{\text{cal}}$	1.00018	$1.0003 \pm 0.0025$	$10^9 A_s$	2.161	$2.219^{+0.069}_{-0.088}$	$F_{\text{AP}}(0.57)$	0.67453	$0.6749 \pm 0.0020$
$A_{217}^{\text{CIB}}$	67.9	$65.8 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8772	$1.888^{+0.015}_{-0.019}$	$f\sigma_8(0.57)$	0.4732	$0.466^{+0.013}_{-0.0087}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.3	$1213 \pm 15$	$\sigma_8(0.57)$	0.6086	$0.598^{+0.018}_{-0.014}$
$A_{143}^{\text{tSZ}}$	7.16	$4.7 \pm 2.0$	$D_{220}$	5716.0	$5722 \pm 40$	$f_{2000}^{143}$	30.23	$32.2 \pm 3.1$
$A_{100}^{\text{PS}}$	255.4	$266 \pm 28$	$D_{810}$	2534.1	$2536 \pm 14$	$f_{2000}^{143 \times 217}$	32.76	$34.2 \pm 2.3$
$A_{143}^{\text{PS}}$	39.7	$47 \pm 8$	$D_{1420}$	814.9	$813.5 \pm 5.0$	$f_{2000}^{217}$	106.25	$107.6 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+9}_{-10}$	$D_{2000}$	230.08	$228.8 \pm 2.0$	$\chi_{\text{lensing}}^2$	9.15	$9.7 \pm 1.3$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$n_{\text{s},0.002}$	0.9715	$0.9782^{+0.0079}_{-0.011}$	$\chi_{\text{lowTEB}}^2$	10494.55	$10495.0 \pm 1.6$
$A^{\text{kSZ}}$	0.01	$< 5.74$	$Y_{\text{P}}$	0.24633	$0.2491^{+0.0016}_{-0.0035}$	$\chi_{\text{plik}}^2$	766.7	$781.7 \pm 5.8$
$A_{100}^{\text{dustTT}}$	7.51	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24766	$0.2505^{+0.0017}_{-0.0036}$	$\chi_{\text{H070p6}}^2$	0.493	$0.34 \pm 0.30$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$10^5 D/H$	2.620	$2.663^{+0.053}_{-0.068}$	$\chi_{\text{JLA}}^2$	706.605	$706.68 \pm 0.19$
$A_{143 \times 217}^{\text{dustTT}}$	17.85	$17.3 \pm 4.2$	Age/Gyr	13.732	$13.57^{+0.22}_{-0.11}$	$\chi_{6\text{DF}}^2$	0.0010	$0.050 \pm 0.071$
$A_{217}^{\text{dustTT}}$	82.0	$81.6 \pm 7.4$	$z_*$	1089.961	$1090.23^{+0.39}_{-0.46}$	$\chi_{\text{MGS}}^2$	1.61	$1.55 \pm 0.60$
$c_{100}$	0.99794	$0.99789 \pm 0.00078$	$r_*$	144.29	$142.5^{+2.3}_{-1.2}$	$\chi_{\text{DR11CMass}}^2$	2.439	$2.92 \pm 0.71$
$c_{217}$	0.99600	$0.9961 \pm 0.0015$	$100\theta_*$	1.04113	$1.04076^{+0.00066}_{-0.00055}$	$\chi_{\text{DR11LOWZ}}^2$	0.323	$0.58 \pm 0.55$
$H_0$	68.27	$69.01^{+0.89}_{-1.4}$	$D_A/\text{Gpc}$	13.859	$13.69^{+0.21}_{-0.11}$	$\chi_{\text{prior}}^2$	2.03	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.6944	$0.6931 \pm 0.0080$	$z_{\text{drag}}$	1059.89	$1060.61^{+0.68}_{-0.90}$	$\chi_{\text{CMB}}^2$	11270.4	$11286.4 \pm 5.8$
$\Omega_m$	0.3056	$0.3069 \pm 0.0080$	$r_{\text{drag}}$	146.96	$145.1^{+2.4}_{-1.2}$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.1$
$\Omega_m h^2$	0.14243	$0.1461^{+0.0026}_{-0.0045}$	$k_D$	0.14072	$0.14212^{+0.00099}_{-0.0017}$			

Best-fit  $\chi_{\text{eff}}^2 = 11983.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 12005.95$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.93$ ;  $R - 1 = 0.00629$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.03) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.15 ( $\Delta$  -0.11) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.55 ( $\Delta$  -0.37) plik\_dx11dr2\_HM\_v18\_TT: 766.65 ( $\Delta$  0.52) Hubble - H070p6: 0.49 ( $\Delta$  -0.18) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

## 12.14 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022287	$0.02241 \pm 0.00017$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$r_*$	144.80	$143.6^{+1.2}_{-0.49}$
$\Omega_c h^2$	0.11878	$0.1191^{+0.0030}_{-0.0023}$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.336 \pm 0.080$	$100\theta_*$	1.041121	$1.04087^{+0.00041}_{-0.00034}$
$100\theta_{\text{MC}}$	1.040930	$1.04075 \pm 0.00035$	$A_{217}^{\text{dust}TE}$	1.665	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.909	$13.80^{+0.11}_{-0.047}$
$\tau$	0.0660	$0.072^{+0.013}_{-0.015}$	$c_{100}$	0.99814	$0.99812 \pm 0.00076$	$z_{\text{drag}}$	1059.666	$1060.18^{+0.40}_{-0.59}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.002	$< 0.228$	$c_{217}$	0.99606	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	147.50	$146.3^{+1.3}_{-0.52}$
$N_{\text{eff}}$	3.047	$< 3.20$	$H_0$	67.71	$67.94^{+0.53}_{-0.83}$	$k_D$	0.14037	$0.14134^{+0.00048}_{-0.00099}$
$\ln(10^{10} A_s)$	3.0634	$3.078^{+0.026}_{-0.030}$	$\Omega_\Lambda$	0.6909	$0.6872 \pm 0.0072$	$100\theta_D$	0.160914	$0.16107^{+0.00021}_{-0.00031}$
$n_s$	0.9667	$0.9699^{+0.0051}_{-0.0070}$	$\Omega_m$	0.3091	$0.3128 \pm 0.0072$	$z_{\text{eq}}$	3370.8	$3326^{+54}_{-27}$
$y_{\text{cal}}$	1.00011	$1.0003 \pm 0.0025$	$\Omega_m h^2$	0.14173	$0.1443^{+0.0014}_{-0.0026}$	$k_{\text{eq}}$	0.010289	$0.01026^{+0.00016}_{-0.000098}$
$A_{217}^{\text{CIB}}$	68.0	$65.2 \pm 6.6$	$\Omega_\nu h^2$	0.00066	$0.00280^{+0.00061}_{-0.0023}$	$100\theta_{\text{eq}}$	0.8187	$0.8286^{+0.0052}_{-0.012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^3$	0.09597	$0.09806^{+0.00082}_{-0.0024}$	$100\theta_{s, \text{eq}}$	0.45228	$0.4574^{+0.0027}_{-0.0061}$
$A_{143}^{\text{tSZ}}$	7.31	$5.2 \pm 1.9$	$\sigma_8$	0.8154	$0.796^{+0.024}_{-0.016}$	$r_{\text{drag}}/D_V(0.57)$	0.071712	$0.07148 \pm 0.00039$
$A_{100}^{\text{PS}}$	257.5	$264 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4534	$0.445^{+0.012}_{-0.0079}$	$H(0.57)$	93.03	$93.59^{+0.31}_{-0.81}$
$A_{143}^{\text{PS}}$	38.6	$45 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6080	$0.596^{+0.016}_{-0.010}$	$D_A(0.57)$	1386.3	$1380^{+14}_{-7.3}$
$A_{143 \times 217}^{\text{PS}}$	32.4	$40^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9909	$0.966^{+0.027}_{-0.016}$	$F_{\text{AP}}(0.57)$	0.67543	$0.6763 \pm 0.0018$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4541	$2.459 \pm 0.025$	$f\sigma_8(0.57)$	0.4735	$0.464^{+0.013}_{-0.0083}$
$A^{\text{kSZ}}$	0.00	$< 4.86$	$z_{\text{re}}$	8.83	$9.4 \pm 1.3$	$\sigma_8(0.57)$	0.6072	$0.592^{+0.018}_{-0.013}$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$10^9 A_s$	2.140	$2.173^{+0.055}_{-0.067}$	$f_{2000}^{143}$	29.82	$30.9 \pm 2.7$
$A_{143}^{\text{dust}TT}$	9.11	$9.1 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8755	$1.882^{+0.012}_{-0.014}$	$f_{2000}^{143 \times 217}$	32.54	$33.3 \pm 1.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$17.3 \pm 4.1$	$D_{40}$	1228.7	$1225 \pm 13$	$f_{2000}^{217}$	106.08	$106.8 \pm 1.9$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.4$	$D_{220}$	5723.5	$5728 \pm 39$	$\chi_{\text{lensing}}^2$	9.64	$10.2 \pm 1.7$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0817 \pm 0.0057$	$D_{810}$	2533.7	$2535 \pm 14$	$\chi_{\text{lowTEB}}^2$	10495.23	$10495.5 \pm 1.2$
$A_{100 \times 143}^{\text{dust}EE}$	0.04909	$0.0493 \pm 0.0050$	$D_{1420}$	814.70	$814.2 \pm 4.7$	$\chi_{\text{plik}}^2$	2435.2	$2455.5 \pm 7.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.099 \pm 0.033$	$D_{2000}$	230.18	$229.5 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0155	$0.086 \pm 0.099$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1007 \pm 0.0069$	$n_{s, 0.002}$	0.9667	$0.9699^{+0.0051}_{-0.0070}$	$\chi_{\text{MGS}}^2$	1.343	$1.14 \pm 0.47$
$A_{143 \times 217}^{\text{dust}EE}$	0.2245	$0.224 \pm 0.046$	$Y_P$	0.24536	$0.24709^{+0.00062}_{-0.0018}$	$\chi_{\text{DR11CMAS}}^2$	2.42	$3.05 \pm 0.85$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.24669	$0.24842^{+0.00062}_{-0.0018}$	$\chi_{\text{DR11LOWZ}}^2$	0.54	$0.99 \pm 0.67$
$A_{100}^{\text{dust}TE}$	0.1395	$0.141 \pm 0.038$	$10^5 D/H$	2.6072	$2.628^{+0.031}_{-0.037}$	$\chi_{\text{prior}}^2$	7.1	$19.7 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1303	$0.131 \pm 0.029$	Age/Gyr	13.800	$13.71^{+0.11}_{-0.041}$	$\chi_{\text{CMB}}^2$	12940.0	$12961.1 \pm 6.9$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$z_*$	1089.919	$1090.07^{+0.26}_{-0.29}$	$\chi_{\text{BAO}}^2$	4.33	$5.3 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 12951.48$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.10$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.46$ ;  $R - 1 = 0.01261$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMAS: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.64 ( $\Delta$  -0.03)

lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.23 ( $\Delta$  0.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.16 ( $\Delta$  -0.14)

12.15 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022295	$0.02243 \pm 0.00017$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.336 \pm 0.080$	$D_A/\text{Gpc}$	13.903	$13.79^{+0.12}_{-0.050}$
$\Omega_c h^2$	0.11897	$0.1193^{+0.0030}_{-0.0024}$	$A_{217}^{\text{dust}TE}$	1.662	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.70	$1060.24^{+0.41}_{-0.61}$
$100\theta_{\text{MC}}$	1.040936	$1.04075^{+0.00038}_{-0.00034}$	$c_{100}$	0.99815	$0.99811 \pm 0.00076$	$r_{\text{drag}}$	147.44	$146.2^{+1.4}_{-0.56}$
$\tau$	0.0650	$0.073^{+0.013}_{-0.015}$	$c_{217}$	0.99609	$0.9961 \pm 0.0014$	$k_D$	0.14044	$0.14140^{+0.00050}_{-0.0011}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.216$	$H_0$	67.67	$68.05^{+0.54}_{-0.87}$	$100\theta_D$	0.160899	$0.16108^{+0.00022}_{-0.00033}$
$N_{\text{eff}}$	3.047	$< 3.21$	$\Omega_\Lambda$	0.6901	$0.6881 \pm 0.0071$	$z_{\text{eq}}$	3375.5	$3326^{+52}_{-26}$
$\ln(10^{10} A_s)$	3.0617	$3.080^{+0.026}_{-0.030}$	$\Omega_m$	0.3099	$0.3119 \pm 0.0071$	$k_{\text{eq}}$	0.010303	$0.01026^{+0.00016}_{-0.00010}$
$n_s$	0.9662	$0.9706^{+0.0052}_{-0.0072}$	$\Omega_m h^2$	0.14191	$0.1444^{+0.0015}_{-0.0027}$	$100\theta_{\text{eq}}$	0.8179	$0.8286^{+0.0051}_{-0.011}$
$y_{\text{cal}}$	0.99989	$1.0003 \pm 0.0025$	$\Omega_\nu h^2$	0.00065	$0.00269^{+0.00058}_{-0.0022}$	$100\theta_{s, \text{eq}}$	0.45184	$0.4574^{+0.0026}_{-0.0058}$
$A_{217}^{\text{CIB}}$	67.8	$65.2 \pm 6.6$	$\Omega_m h^3$	0.09603	$0.09827^{+0.00090}_{-0.0026}$	$r_{\text{drag}}/D_V(0.57)$	0.071664	$0.07153 \pm 0.00039$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8154	$0.798^{+0.023}_{-0.015}$	$H(0.57)$	93.02	$93.69^{+0.34}_{-0.88}$
$A_{143}^{\text{tSZ}}$	7.31	$5.2 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.446^{+0.012}_{-0.0077}$	$D_A(0.57)$	1386.9	$1378^{+15}_{-7.6}$
$A_{100}^{\text{PS}}$	257.0	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6084	$0.596^{+0.016}_{-0.010}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6761 \pm 0.0018$
$A_{143}^{\text{PS}}$	38.5	$45 \pm 8$	$\sigma_8/h^{0.5}$	0.9913	$0.967^{+0.026}_{-0.016}$	$f\sigma_8(0.57)$	0.4737	$0.464^{+0.013}_{-0.0081}$
$A_{143 \times 217}^{\text{PS}}$	32.4	$40^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4547	$2.458 \pm 0.025$	$\sigma_8(0.57)$	0.6070	$0.594^{+0.018}_{-0.012}$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$z_{\text{re}}$	8.74	$9.4 \pm 1.3$	$f_{2000}^{143}$	29.77	$30.9 \pm 2.7$
$A^{\text{kSZ}}$	0.00	$< 4.90$	$10^9 A_s$	2.136	$2.178^{+0.056}_{-0.067}$	$f_{2000}^{143 \times 217}$	32.53	$33.3 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8758	$1.883^{+0.012}_{-0.014}$	$f_{2000}^{217}$	106.04	$106.7 \pm 1.9$
$A_{143}^{\text{dust}TT}$	9.06	$9.1 \pm 1.8$	$D_{40}$	1229.4	$1224 \pm 13$	$\chi_{\text{lensing}}^2$	9.71	$10.2 \pm 1.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.69	$17.3 \pm 4.1$	$D_{220}$	5723.5	$5729 \pm 39$	$\chi_{\text{lowTEB}}^2$	10495.32	$10495.4 \pm 1.2$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$D_{810}$	2533.2	$2535 \pm 14$	$\chi_{\text{plik}}^2$	2434.9	$2455.6 \pm 7.1$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0818 \pm 0.0057$	$D_{1420}$	814.47	$814.2 \pm 4.7$	$\chi_{\text{H070p6}}^2$	0.779	$0.63 \pm 0.31$
$A_{100 \times 143}^{\text{dust}EE}$	0.04915	$0.0494 \pm 0.0050$	$D_{2000}$	230.12	$229.5 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0216	$0.076 \pm 0.091$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.099 \pm 0.032$	$n_{s,0.002}$	0.9662	$0.9706^{+0.0052}_{-0.0072}$	$\chi_{\text{MGS}}^2$	1.279	$1.19 \pm 0.47$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1008 \pm 0.0068$	$Y_P$	0.24537	$0.24723^{+0.00069}_{-0.0019}$	$\chi_{\text{DR11CMass}}^2$	2.450	$2.98 \pm 0.78$
$A_{143 \times 217}^{\text{dust}EE}$	0.2232	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.24670	$0.24857^{+0.00069}_{-0.0019}$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.91 \pm 0.64$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$10^5 D/H$	2.6057	$2.628^{+0.031}_{-0.039}$	$\chi_{\text{prior}}^2$	7.1	$19.7 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	Age/Gyr	13.800	$13.70^{+0.12}_{-0.045}$	$\chi_{\text{CMB}}^2$	12940.0	$12961.3 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	0.1320	$0.131 \pm 0.029$	$z_*$	1089.925	$1090.07^{+0.26}_{-0.30}$	$\chi_{\text{BAO}}^2$	4.36	$5.2 \pm 1.1$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$r_*$	144.75	$143.6^{+1.3}_{-0.53}$			
$A_{143}^{\text{dust}TE}$	0.156	$0.154 \pm 0.054$	$100\theta_*$	1.041123	$1.04086^{+0.00043}_{-0.00035}$			

Best-fit  $\chi_{\text{eff}}^2 = 12952.25$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.75$ ;  $R - 1 = 0.01360$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMASS: 2.45 DR11LOWZ: 0.61 CMB - smica\_g30\_ftl\_full\_pp: 9.71 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.32 plik\_dx11dr2\_HM\_v18\_TT+Lensing: 2434.95 Hubble - H070p6: 0.78



12.16 base\_nnu\_meffsterile\_plikHM\_TTTEEE\_lowTEB\_lensing\_BAO\_post\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02243 \pm 0.00017$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.335 \pm 0.080$	$D_A/\text{Gpc}$	13.899	$13.79^{+0.12}_{-0.050}$
$\Omega_c h^2$	0.11889	$0.1192^{+0.0030}_{-0.0025}$	$A_{217}^{\text{dust}TE}$	1.664	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.70	$1060.25^{+0.41}_{-0.61}$
$100\theta_{\text{MC}}$	1.040899	$1.04076^{+0.00038}_{-0.00034}$	$c_{100}$	0.99819	$0.99811 \pm 0.00076$	$r_{\text{drag}}$	147.39	$146.2^{+1.4}_{-0.55}$
$\tau$	0.0676	$0.073^{+0.013}_{-0.015}$	$c_{217}$	0.99606	$0.9961 \pm 0.0014$	$k_D$	0.14045	$0.14139^{+0.00050}_{-0.0011}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.000	$< 0.209$	$H_0$	67.83	$68.11^{+0.53}_{-0.87}$	$100\theta_D$	0.160929	$0.16108^{+0.00022}_{-0.00034}$
$N_{\text{eff}}$	3.059	$< 3.21$	$\Omega_\Lambda$	0.6917	$0.6888 \pm 0.0069$	$z_{\text{eq}}$	3368.3	$3325^{+51}_{-26}$
$\ln(10^{10} A_s)$	3.0669	$3.081^{+0.026}_{-0.030}$	$\Omega_m$	0.3083	$0.3112 \pm 0.0069$	$k_{\text{eq}}$	0.010289	$0.01026^{+0.00016}_{-0.00010}$
$n_s$	0.9674	$0.9709^{+0.0052}_{-0.0072}$	$\Omega_m h^2$	0.14184	$0.1443^{+0.0015}_{-0.0027}$	$100\theta_{\text{eq}}$	0.8192	$0.8288^{+0.0050}_{-0.011}$
$y_{\text{cal}}$	1.00005	$1.0003 \pm 0.0025$	$\Omega_\nu h^2$	0.00065	$0.00264^{+0.00055}_{-0.0022}$	$100\theta_{s, \text{eq}}$	0.45252	$0.4575^{+0.0025}_{-0.0058}$
$A_{217}^{\text{CIB}}$	67.9	$65.1 \pm 6.6$	$\Omega_m h^3$	0.09622	$0.09828^{+0.00091}_{-0.0026}$	$r_{\text{drag}}/D_V(0.57)$	0.071757	$0.07157 \pm 0.00038$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8172	$0.799^{+0.023}_{-0.015}$	$H(0.57)$	93.14	$93.71^{+0.34}_{-0.89}$
$A_{143}^{\text{tSZ}}$	7.30	$5.2 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.446^{+0.012}_{-0.0076}$	$D_A(0.57)$	1384.3	$1377^{+15}_{-7.6}$
$A_{100}^{\text{PS}}$	256.9	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6089	$0.597^{+0.016}_{-0.010}$	$F_{\text{AP}}(0.57)$	0.67521	$0.6759 \pm 0.0018$
$A_{143}^{\text{PS}}$	38.7	$45 \pm 8$	$\sigma_8/h^{0.5}$	0.9922	$0.968^{+0.026}_{-0.016}$	$f\sigma_8(0.57)$	0.4743	$0.465^{+0.013}_{-0.0081}$
$A_{143 \times 217}^{\text{PS}}$	32.6	$40^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4556	$2.458 \pm 0.025$	$\sigma_8(0.57)$	0.6087	$0.594^{+0.018}_{-0.012}$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$z_{\text{re}}$	8.99	$9.5 \pm 1.3$	$f_{2000}^{143}$	29.80	$30.8 \pm 2.7$
$A^{\text{kSZ}}$	0.01	$< 4.89$	$10^9 A_s$	2.148	$2.179^{+0.056}_{-0.067}$	$f_{2000}^{143 \times 217}$	32.53	$33.2 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.47	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8758	$1.883^{+0.012}_{-0.014}$	$f_{2000}^{217}$	106.03	$106.7 \pm 1.9$
$A_{143}^{\text{dust}TT}$	9.01	$9.1 \pm 1.8$	$D_{40}$	1227.9	$1224 \pm 13$	$\chi^2_{\text{lensing}}$	9.83	$10.2 \pm 1.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.57	$17.3 \pm 4.1$	$D_{220}$	5722.9	$5729 \pm 39$	$\chi^2_{\text{lowTEB}}$	10495.20	$10495.4 \pm 1.2$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.4$	$D_{810}$	2533.4	$2535 \pm 14$	$\chi^2_{\text{plik}}$	2435.1	$2455.7 \pm 7.1$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0818 \pm 0.0057$	$D_{1420}$	814.62	$814.3 \pm 4.7$	$\chi^2_{\text{H070p6}}$	0.693	$0.61 \pm 0.30$
$A_{100 \times 143}^{\text{dust}EE}$	0.04935	$0.0495 \pm 0.0050$	$D_{2000}$	230.17	$229.5 \pm 1.6$	$\chi^2_{\text{JLA}}$	706.663	$706.78 \pm 0.21$
$A_{100 \times 217}^{\text{dust}EE}$	0.1005	$0.099 \pm 0.032$	$n_{s, 0.002}$	0.9674	$0.9709^{+0.0052}_{-0.0072}$	$\chi^2_{6\text{DF}}$	0.0106	$0.067 \pm 0.083$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1008 \pm 0.0068$	$Y_P$	0.24554	$0.24724^{+0.00069}_{-0.0019}$	$\chi^2_{\text{MGS}}$	1.407	$1.24 \pm 0.47$
$A_{143 \times 217}^{\text{dust}EE}$	0.2245	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.24687	$0.24857^{+0.00069}_{-0.0019}$	$\chi^2_{\text{DR11CMass}}$	2.412	$2.92 \pm 0.70$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$10^5 D/H$	2.6080	$2.626^{+0.031}_{-0.039}$	$\chi^2_{\text{DR11LOWZ}}$	0.49	$0.85 \pm 0.60$
$A_{100}^{\text{dust}TE}$	0.1398	$0.141 \pm 0.038$	Age/Gyr	13.787	$13.70^{+0.12}_{-0.045}$	$\chi^2_{\text{prior}}$	7.1	$19.7 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1313	$0.131 \pm 0.029$	$z_*$	1089.917	$1090.05^{+0.26}_{-0.30}$	$\chi^2_{\text{CMB}}$	12940.2	$12961.3 \pm 6.9$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	$r_*$	144.70	$143.6^{+1.3}_{-0.53}$	$\chi^2_{\text{BAO}}$	4.32	$5.1 \pm 1.0$
$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$100\theta_*$	1.041085	$1.04087^{+0.00044}_{-0.00035}$			

Best-fit  $\chi^2_{\text{eff}} = 13658.95$ ;  $\Delta\chi^2_{\text{eff}} = -0.09$ ;  $\bar{\chi}^2_{\text{eff}} = 13693.43$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.33$ ;  $R - 1 = 0.01427$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMASS: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.49 ( $\Delta$  0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.83 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v10495.20 ( $\Delta$  -0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.15 ( $\Delta$  -0.05) Hubble - H070p6: 0.69 ( $\Delta$  -0.03) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

# 13 nnu+meffsterile+r

## 13.1 base\_nnu\_meffsterile\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02250^{+0.00026}_{-0.00032}$	$\Omega_m h^2$	$0.1474^{+0.0035}_{-0.0048}$	$k_D$	$0.1425^{+0.0012}_{-0.0018}$
$\Omega_c h^2$	$0.1219 \pm 0.0039$	$\Omega_\nu h^2$	$0.00301^{+0.00080}_{-0.0025}$	$100\theta_D$	$0.16158^{+0.00044}_{-0.00065}$
$100\theta_{MC}$	$1.04062 \pm 0.00053$	$\Omega_m h^3$	$0.1017^{+0.0023}_{-0.0056}$	$z_{eq}$	$3306^{+62}_{-52}$
$\tau$	$0.080 \pm 0.020$	$\sigma_8$	$0.798^{+0.032}_{-0.025}$	$k_{eq}$	$0.01033^{+0.00018}_{-0.00016}$
$m_{\nu, sterile}^{eff}$	$< 0.265$	$\sigma_8 \Omega_m^{0.5}$	$0.444^{+0.011}_{-0.0093}$	$100\theta_{eq}$	$0.833^{+0.010}_{-0.013}$
$N_{eff}$	$< 3.45$	$\sigma_8 \Omega_m^{0.25}$	$0.595^{+0.018}_{-0.012}$	$100\theta_{s,eq}$	$0.4594^{+0.0052}_{-0.0065}$
$\ln(10^{10} A_s)$	$3.099^{+0.037}_{-0.044}$	$\sigma_8/h^{0.5}$	$0.961^{+0.032}_{-0.018}$	$r_{drag}/D_V(0.57)$	$0.0716^{+0.0010}_{-0.0011}$
$n_s$	$0.9796^{+0.0097}_{-0.014}$	$\langle d^2 \rangle^{1/2}$	$2.448 \pm 0.031$	$H(0.57)$	$94.84^{+0.84}_{-2.1}$
$r$	$< 0.0645$	$z_{re}$	$10.1 \pm 1.8$	$D_A(0.57)$	$1361^{+38}_{-20}$
$y_{cal}$	$1.0004 \pm 0.0025$	$10^9 A_s$	$2.219^{+0.079}_{-0.099}$	$F_{AP}(0.57)$	$0.6757 \pm 0.0050$
$A_{217}^{CIB}$	$65.9 \pm 6.7$	$10^9 A_s e^{-2\tau}$	$1.891^{+0.017}_{-0.019}$	$f\sigma_8(0.57)$	$0.464^{+0.016}_{-0.0098}$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1229^{+19}_{-21}$	$\sigma_8(0.57)$	$0.594^{+0.027}_{-0.023}$
$A_{143}^{tSZ}$	$4.7 \pm 2.0$	$D_{220}$	$5715 \pm 41$	$r_{0.002}$	$< 0.0621$
$A_{100}^{PS}$	$266 \pm 28$	$D_{810}$	$2537 \pm 14$	$r_{0.01}$	$< 0.0633$
$A_{143}^{PS}$	$47 \pm 8$	$D_{1420}$	$813.5 \pm 5.1$	$\ln(10^{10} A_t)$	$-0.31^{+1.4}_{-0.63}$
$A_{143 \times 217}^{PS}$	$40^{+9}_{-10}$	$D_{2000}$	$228.5 \pm 2.1$	$r_{10}$	$< 0.0314$
$A_{217}^{PS}$	$96 \pm 10$	$n_{s,0.002}$	$0.9796^{+0.0097}_{-0.014}$	$10^9 A_t$	$< 0.143$
$A^{kSZ}$	$< 5.76$	$Y_P$	$0.2498^{+0.0018}_{-0.0039}$	$10^9 A_t e^{-2\tau}$	$< 0.122$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P^{BBN}$	$0.2511^{+0.0018}_{-0.0039}$	$f_{2000}^{143}$	$32.5 \pm 3.2$
$A_{143}^{dustTT}$	$9.1 \pm 1.9$	$10^5 D/H$	$2.680^{+0.058}_{-0.068}$	$f_{2000}^{143 \times 217}$	$34.5 \pm 2.4$
$A_{143 \times 217}^{dustTT}$	$17.4 \pm 4.1$	$Age/Gyr$	$13.54^{+0.27}_{-0.11}$	$f_{2000}^{217}$	$107.9 \pm 2.3$
$A_{217}^{dustTT}$	$81.8 \pm 7.4$	$z_*$	$1090.38 \pm 0.50$	$\chi^2_{lensing}$	$9.7 \pm 1.3$
$c_{100}$	$0.99787 \pm 0.00078$	$r_*$	$142.0^{+2.3}_{-1.4}$	$\chi^2_{lowTEB}$	$10496.8 \pm 2.3$
$c_{217}$	$0.9962 \pm 0.0014$	$100\theta_*$	$1.04063^{+0.00065}_{-0.00057}$	$\chi^2_{plik}$	$782.0 \pm 5.9$
$H_0$	$69.0^{+1.4}_{-2.5}$	$D_A/Gpc$	$13.65^{+0.22}_{-0.13}$	$\chi^2_{prior}$	$7.5 \pm 3.6$
$\Omega_\Lambda$	$0.689 \pm 0.020$	$z_{drag}$	$1060.74^{+0.70}_{-1.0}$	$\chi^2_{CMB}$	$11288.5 \pm 6.1$
$\Omega_m$	$0.311 \pm 0.020$	$r_{drag}$	$144.6^{+2.4}_{-1.5}$		

$$\bar{\chi}^2_{eff} = 11295.99; \Delta\bar{\chi}^2_{eff} = 3.68; R - 1 = 0.03538$$

### 13.2 base\_nnu\_meffsterile\_r\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022259	$0.02238 \pm 0.00018$	$A_{143}^{\text{dust}TE}$	0.155	$0.156 \pm 0.054$	$100\theta_*$	1.041029	$1.04070^{+0.00045}_{-0.00038}$
$\Omega_c h^2$	0.11921	$0.1207 \pm 0.0028$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.338 \pm 0.080$	$D_A/\text{Gpc}$	13.901	$13.74^{+0.15}_{-0.080}$
$100\theta_{\text{MC}}$	1.040830	$1.04060^{+0.00040}_{-0.00036}$	$A_{217}^{\text{dust}TE}$	1.666	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.63	$1060.30^{+0.46}_{-0.64}$
$\tau$	0.0623	$0.069 \pm 0.015$	$c_{100}$	0.99814	$0.99810 \pm 0.00077$	$r_{\text{drag}}$	147.42	$145.6^{+1.6}_{-0.88}$
$m_{\nu, \text{sterile}}^{\text{eff}}$	0.001	$< 0.332$	$c_{217}$	0.99615	$0.9962 \pm 0.0014$	$k_D$	0.14044	$0.14189^{+0.00073}_{-0.0013}$
$N_{\text{eff}}$	3.047	$< 3.27$	$H_0$	67.51	$67.41^{+0.79}_{-1.0}$	$100\theta_D$	0.160925	$0.16118^{+0.00024}_{-0.00033}$
$\ln(10^{10} A_s)$	3.0569	$3.076 \pm 0.030$	$\Omega_\Lambda$	0.6882	$0.677^{+0.015}_{-0.012}$	$z_{\text{eq}}$	3380.4	$3339^{+47}_{-35}$
$n_s$	0.9656	$0.9693^{+0.0058}_{-0.0075}$	$\Omega_m$	0.3118	$0.323^{+0.012}_{-0.015}$	$k_{\text{eq}}$	0.010318	$0.01034^{+0.00015}_{-0.00012}$
$r$	0.0002	$< 0.0566$	$\Omega_m h^2$	0.14213	$0.1466^{+0.0025}_{-0.0040}$	$100\theta_{\text{eq}}$	0.8168	$0.8263^{+0.0069}_{-0.010}$
$y_{\text{cal}}$	0.999996	$1.0003 \pm 0.0024$	$\Omega_\nu h^2$	0.00065	$0.0035^{+0.0011}_{-0.0027}$	$100\theta_{s, \text{eq}}$	0.45131	$0.4562^{+0.0035}_{-0.0053}$
$A_{217}^{\text{CIB}}$	68.2	$65.7 \pm 6.6$	$\Omega_m h^3$	0.09595	$0.0988^{+0.0012}_{-0.0028}$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.07095^{+0.00079}_{-0.00068}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8140	$0.784^{+0.031}_{-0.021}$	$H(0.57)$	92.95	$93.56^{+0.37}_{-0.81}$
$A_{143}^{\text{tSZ}}$	7.25	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4546	$0.445^{+0.012}_{-0.0086}$	$D_A(0.57)$	1389.0	$1386^{+16}_{-9.7}$
$A_{100}^{\text{PS}}$	257.3	$266 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6083	$0.591^{+0.019}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67612	$0.6788^{+0.0031}_{-0.0038}$
$A_{143}^{\text{PS}}$	39.1	$46 \pm 8$	$\sigma_8/h^{0.5}$	0.9907	$0.955^{+0.034}_{-0.020}$	$f\sigma_8(0.57)$	0.4734	$0.459^{+0.016}_{-0.010}$
$A_{143 \times 217}^{\text{PS}}$	32.8	$40^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4528	$2.463 \pm 0.028$	$\sigma_8(0.57)$	0.6055	$0.581^{+0.025}_{-0.018}$
$A_{217}^{\text{PS}}$	96.2	$96 \pm 10$	$z_{\text{re}}$	8.49	$9.1 \pm 1.4$	$r_{0.002}$	0.0002	$< 0.0525$
$A^{\text{kSZ}}$	0.01	$< 5.19$	$10^9 A_s$	2.126	$2.168^{+0.060}_{-0.070}$	$r_{0.01}$	0.0002	$< 0.0545$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8771	$1.888 \pm 0.014$	$\ln(10^{10} A_t)$	-5.36	$-0.44^{+1.4}_{-0.63}$
$A_{143}^{\text{dust}TT}$	9.02	$9.1 \pm 1.8$	$D_{40}$	1229.7	$1240^{+15}_{-19}$	$r_{10}$	0.0001	$< 0.0268$
$A_{143 \times 217}^{\text{dust}TT}$	17.62	$17.3 \pm 4.1$	$D_{220}$	5721.0	$5719 \pm 38$	$10^9 A_t$	0.000	$< 0.122$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.3$	$D_{810}$	2533.7	$2536 \pm 13$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.107$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0809 \pm 0.0057$	$D_{1420}$	814.41	$813.7 \pm 4.7$	$f_{2000}^{143}$	29.95	$31.6 \pm 2.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0484 \pm 0.0050$	$D_{2000}$	230.00	$228.9 \pm 1.7$	$f_{2000}^{143 \times 217}$	32.68	$33.9 \pm 2.1$
$A_{100 \times 217}^{\text{dust}EE}$	0.0991	$0.0998 \pm 0.033$	$n_{s, 0.002}$	0.9656	$0.9693^{+0.0058}_{-0.0075}$	$f_{2000}^{217}$	106.19	$107.3 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.1006	$0.0997 \pm 0.0069$	$Y_P$	0.24535	$0.2478^{+0.0010}_{-0.0022}$	$\chi_{\text{lensing}}^2$	9.67	$10.2 \pm 1.7$
$A_{143 \times 217}^{\text{dust}EE}$	0.2253	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.24668	$0.2491^{+0.0010}_{-0.0022}$	$\chi_{\text{lowTEB}}^2$	10495.31	$10497.2 \pm 2.1$
$A_{217}^{\text{dust}EE}$	0.657	$0.65 \pm 0.13$	$10^5 D/H$	2.6126	$2.651^{+0.039}_{-0.044}$	$\chi_{\text{plik}}^2$	2434.9	$2455.9 \pm 7.1$
$A_{100}^{\text{dust}TE}$	0.1399	$0.142 \pm 0.038$	Age/Gyr	13.808	$13.70^{+0.12}_{-0.053}$	$\chi_{\text{prior}}^2$	7.2	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1320	$0.132 \pm 0.029$	$z_*$	1089.995	$1090.34 \pm 0.38$	$\chi_{\text{CMB}}^2$	12939.9	$12963.3 \pm 7.2$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	$r_*$	144.71	$143.0^{+1.6}_{-0.86}$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.08$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 12982.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 3.66$ ;  $R - 1 = 0.02047$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.67 ( $\Delta$  -0.10) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.31 ( $\Delta$  0.02) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.94 ( $\Delta$  0.03)

## 14 nnu+mnu

### 14.1 base\_nnu\_mnu\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022306	$0.02215 \pm 0.00041$	$\Omega_\Lambda$	0.6950	$0.661^{+0.054}_{-0.023}$	$r_*$	144.42	$144.3 \pm 2.6$
$\Omega_c h^2$	0.11972	$0.1205 \pm 0.0039$	$\Omega_m$	0.3050	$0.339^{+0.023}_{-0.054}$	$100\theta_*$	1.04107	$1.04095 \pm 0.00069$
$100\theta_{MC}$	1.04094	$1.04068 \pm 0.00058$	$\Omega_m h^2$	0.14203	$0.1452^{+0.0045}_{-0.0052}$	$D_A/\text{Gpc}$	13.872	$13.86 \pm 0.25$
$\tau$	0.0789	$0.081 \pm 0.021$	$\Omega_\nu h^2$	0.00000	$< 0.00295$	$z_{\text{drag}}$	1059.78	$1059.5 \pm 1.3$
$\Sigma m_\nu [\text{eV}]$	0.000	$< 0.274$	$\Omega_m h^3$	0.0969	$0.0956 \pm 0.0066$	$r_{\text{drag}}$	147.11	$147.1 \pm 2.8$
$N_{\text{eff}}$	3.074	$3.08 \pm 0.31$	$\sigma_8$	0.8436	$0.796^{+0.065}_{-0.030}$	$k_D$	0.14069	$0.1407 \pm 0.0020$
$\ln(10^{10} A_s)$	3.0923	$3.098 \pm 0.046$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.461 \pm 0.014$	$100\theta_D$	0.16096	$0.16107 \pm 0.00068$
$n_s$	0.9681	$0.965 \pm 0.016$	$\sigma_8 \Omega_m^{0.25}$	0.6270	$0.606^{+0.030}_{-0.017}$	$z_{\text{eq}}$	3381	$3398 \pm 78$
$y_{\text{cal}}$	1.00030	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0213	$0.981^{+0.052}_{-0.025}$	$k_{\text{eq}}$	0.010339	$0.01039 \pm 0.00016$
$A_{217}^{\text{CIB}}$	65.7	$64.4 \pm 6.7$	$\langle d^2 \rangle^{1/2}$	2.4999	$2.497 \pm 0.050$	$100\theta_{\text{eq}}$	0.8168	$0.814 \pm 0.015$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$z_{\text{re}}$	10.04	$10.3^{+2.0}_{-1.8}$	$100\theta_{\text{s,eq}}$	0.4513	$0.4498 \pm 0.0075$
$A_{143}^{\text{tSZ}}$	7.03	$5.0 \pm 2.0$	$10^9 A_s$	2.203	$2.217^{+0.095}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07192	$0.0704^{+0.0024}_{-0.0014}$
$A_{100}^{\text{PS}}$	251.9	$260 \pm 29$	$10^9 A_s e^{-2\tau}$	1.8810	$1.882 \pm 0.022$	$H(0.57)$	93.46	$92.2 \pm 2.9$
$A_{143}^{\text{PS}}$	40.7	$45 \pm 9$	$D_{40}$	1232.9	$1236 \pm 22$	$D_A(0.57)$	1378	$1415^{+51}_{-76}$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40^{+10}_{-10}$	$D_{220}$	5718.7	$5716 \pm 41$	$F_{\text{AP}}(0.57)$	0.6744	$0.6826^{+0.0062}_{-0.013}$
$A_{217}^{\text{PS}}$	99.4	$97 \pm 10$	$D_{810}$	2534.6	$2535 \pm 14$	$f\sigma_8(0.57)$	0.4876	$0.470^{+0.026}_{-0.013}$
$A^{\text{kSZ}}$	0.00	$< 4.98$	$D_{1420}$	815.0	$814.3 \pm 5.2$	$\sigma_8(0.57)$	0.6287	$0.588^{+0.057}_{-0.027}$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$D_{2000}$	230.61	$229.7 \pm 2.3$	$f_{2000}^{143}$	29.35	$31 \pm 3$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.8$	$n_{\text{s},0.002}$	0.9681	$0.965 \pm 0.016$	$f_{2000}^{143 \times 217}$	32.07	$33.1 \pm 2.6$
$A_{143 \times 217}^{\text{dustTT}}$	17.82	$17.2 \pm 4.2$	$Y_{\text{P}}$	0.24574	$0.2456 \pm 0.0044$	$f_{2000}^{217}$	105.68	$106.7 \pm 2.4$
$A_{217}^{\text{dustTT}}$	82.4	$81.9 \pm 7.4$	$Y_{\text{P}}^{\text{BBN}}$	0.24707	$0.2469 \pm 0.0044$	$\chi_{\text{lowTEB}}^2$	10496.29	$10497.9 \pm 3.0$
$c_{100}$	0.99790	$0.99788 \pm 0.00078$	$10^5 \text{D}/\text{H}$	2.613	$2.642 \pm 0.070$	$\chi_{\text{plik}}^2$	763.3	$779.1 \pm 6.2$
$c_{217}$	0.99585	$0.9960 \pm 0.0015$	$\text{Age}/\text{Gyr}$	13.745	$13.89^{+0.35}_{-0.43}$	$\chi_{\text{prior}}^2$	1.95	$7.4 \pm 3.6$
$H_0$	68.23	$65.8^{+4.5}_{-3.3}$	$z_*$	1090.00	$1090.31^{+0.52}_{-0.59}$	$\chi_{\text{CMB}}^2$	11259.6	$11277.0 \pm 6.0$

Best-fit  $\chi_{\text{eff}}^2 = 11261.51$ ;  $\Delta\chi_{\text{eff}}^2 = -0.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.60$ ;  $R - 1 = 0.00589$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.29 ( $\Delta$  -0.18) plik\_dx11dr2\_HM\_v18\_TT: 763.27 ( $\Delta$  -0.10)

## 14.2 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022268	$0.02236 \pm 0.00025$	$\Omega_m h^2$	0.14227	$0.1442 \pm 0.0043$	$r_{\text{drag}}$	147.11	$146.3 \pm 2.4$
$\Omega_c h^2$	0.11996	$0.1207 \pm 0.0039$	$\Omega_\nu h^2$	0.00004	$< 0.00134$	$k_D$	0.14068	$0.1412 \pm 0.0017$
$100\theta_{\text{MC}}$	1.04089	$1.04077 \pm 0.00056$	$\Omega_m h^3$	0.09681	$0.0985^{+0.0046}_{-0.0051}$	$100\theta_D$	0.16099	$0.16123 \pm 0.00060$
$\tau$	0.0754	$0.085 \pm 0.019$	$\sigma_8$	0.8415	$0.829^{+0.025}_{-0.021}$	$z_{\text{eq}}$	3388.1	$3358 \pm 40$
$\Sigma m_\nu [\text{eV}]$	0.004	$< 0.125$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.461^{+0.013}_{-0.011}$	$k_{\text{eq}}$	0.010357	$0.01034 \pm 0.00015$
$N_{\text{eff}}$	3.069	$3.18^{+0.24}_{-0.27}$	$\sigma_8 \Omega_m^{0.25}$	0.6265	$0.618^{+0.017}_{-0.015}$	$100\theta_{\text{eq}}$	0.8155	$0.8213^{+0.0074}_{-0.0083}$
$\ln(10^{10} A_s)$	3.0859	$3.106 \pm 0.041$	$\sigma_8/h^{0.5}$	1.0200	$1.003^{+0.028}_{-0.021}$	$100\theta_{s,\text{eq}}$	0.45060	$0.4536^{+0.0038}_{-0.0042}$
$n_s$	0.9671	$0.973 \pm 0.010$	$\langle d^2 \rangle^{1/2}$	2.4973	$2.484 \pm 0.044$	$r_{\text{drag}}/D_V(0.57)$	0.071805	$0.07171 \pm 0.00049$
$y_{\text{cal}}$	1.00041	$1.0005 \pm 0.0025$	$z_{\text{re}}$	9.74	$10.5 \pm 1.7$	$H(0.57)$	93.36	$93.8 \pm 1.7$
$A_{217}^{\text{CIB}}$	66.5	$64.6 \pm 6.8$	$10^9 A_s$	2.189	$2.234^{+0.086}_{-0.099}$	$D_A(0.57)$	1380.5	$1375 \pm 27$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$10^9 A_s e^{-2\tau}$	1.8824	$1.885 \pm 0.021$	$F_{\text{AP}}(0.57)$	0.67494	$0.6754 \pm 0.0023$
$A_{143}^{\text{tSZ}}$	7.06	$5.0 \pm 2.0$	$D_{40}$	1233.6	$1229 \pm 16$	$f\sigma_8(0.57)$	0.4870	$0.482^{+0.013}_{-0.011}$
$A_{100}^{\text{PS}}$	253.0	$260 \pm 28$	$D_{220}$	5717.8	$5720 \pm 40$	$\sigma_8(0.57)$	0.6266	$0.618^{+0.019}_{-0.017}$
$A_{143}^{\text{PS}}$	39.5	$45 \pm 8$	$D_{810}$	2535.6	$2535 \pm 14$	$f_{2000}^{143}$	29.43	$30.7 \pm 3.4$
$A_{143 \times 217}^{\text{PS}}$	34.1	$39^{+10}_{-10}$	$D_{1420}$	815.0	$814.3^{+5.5}_{-5.0}$	$f_{2000}^{143 \times 217}$	32.17	$33.0 \pm 2.5$
$A_{217}^{\text{PS}}$	98.2	$97 \pm 10$	$D_{2000}$	230.52	$229.8 \pm 2.2$	$f_{2000}^{217}$	105.88	$106.5 \pm 2.4$
$A^{\text{kSZ}}$	0.01	$< 4.97$	$n_{s,0.002}$	0.9671	$0.973 \pm 0.010$	$\chi_{\text{lowTEB}}^2$	10496.09	$10496.9 \pm 2.6$
$A_{100}^{\text{dustTT}}$	7.48	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24567	$0.2472 \pm 0.0034$	$\chi_{\text{plik}}^2$	763.5	$778.6 \pm 6.1$
$A_{143}^{\text{dustTT}}$	9.07	$9.0 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24699	$0.2485 \pm 0.0034$	$\chi_{6\text{DF}}^2$	0.0061	$0.069 \pm 0.095$
$A_{143 \times 217}^{\text{dustTT}}$	17.77	$17.1 \pm 4.2$	$10^5 D/H$	2.619	$2.639 \pm 0.068$	$\chi_{\text{MGS}}^2$	1.47	$1.43 \pm 0.63$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.4$	$\text{Age/Gyr}$	13.756	$13.69 \pm 0.23$	$\chi_{\text{DR11CMass}}^2$	2.413	$3.01 \pm 0.85$
$c_{100}$	0.99794	$0.99788 \pm 0.00078$	$z_*$	1090.062	$1090.12 \pm 0.48$	$\chi_{\text{DR11LOWZ}}^2$	0.429	$0.73 \pm 0.68$
$c_{217}$	0.99595	$0.9960 \pm 0.0015$	$r_*$	144.41	$143.6 \pm 2.3$	$\chi_{\text{prior}}^2$	1.96	$7.4 \pm 3.5$
$H_0$	68.05	$68.3 \pm 1.5$	$100\theta_*$	1.04105	$1.04089 \pm 0.00068$	$\chi_{\text{CMB}}^2$	11259.6	$11275.5 \pm 5.7$
$\Omega_\Lambda$	0.6928	$0.6908 \pm 0.0090$	$D_A/\text{Gpc}$	13.871	$13.80 \pm 0.21$	$\chi_{\text{BAO}}^2$	4.32	$5.2 \pm 1.3$
$\Omega_m$	0.3072	$0.3092 \pm 0.0090$	$z_{\text{drag}}$	1059.70	$1060.07 \pm 0.94$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.87$ ;  $\Delta\chi_{\text{eff}}^2 = -0.57$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.16$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.80$ ;  $R - 1 = 0.01565$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.19) DR11CMass: 2.41 ( $\Delta$  -0.04) DR11LOWZ: 0.43 ( $\Delta$  -0.19) CMB - lowl.SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10496.09 ( $\Delta$  -0.33) plik\_dx11dr2\_HM\_v18\_TT: 763.49 ( $\Delta$  -0.11)

### 14.3 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022403	$0.02241 \pm 0.00031$	$\Omega_m$	0.2997	$0.311^{+0.017}_{-0.024}$	$D_A/\text{Gpc}$	13.788	$13.74 \pm 0.20$
$\Omega_c h^2$	0.12086	$0.1216 \pm 0.0037$	$\Omega_m h^2$	0.14327	$0.1454^{+0.0040}_{-0.0046}$	$z_{\text{drag}}$	1060.16	$1060.3 \pm 1.0$
$100\theta_{\text{MC}}$	1.04085	$1.04067 \pm 0.00056$	$\Omega_\nu h^2$	0.00001	$< 0.00163$	$r_{\text{drag}}$	146.16	$145.7 \pm 2.3$
$\tau$	0.0820	$0.087 \pm 0.021$	$\Omega_m h^3$	0.0991	$0.0997 \pm 0.0050$	$k_D$	0.14135	$0.1417 \pm 0.0017$
$\Sigma m_\nu [\text{eV}]$	0.001	$< 0.151$	$\sigma_8$	0.8489	$0.827^{+0.034}_{-0.023}$	$100\theta_D$	0.16119	$0.16137 \pm 0.00059$
$N_{\text{eff}}$	3.182	$3.25 \pm 0.25$	$\sigma_8 \Omega_m^{0.5}$	0.4647	$0.460 \pm 0.013$	$z_{\text{eq}}$	3362	$3352 \pm 59$
$\ln(10^{10} A_s)$	3.1012	$3.112 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6281	$0.617^{+0.019}_{-0.015}$	$k_{\text{eq}}$	0.010355	$0.01037 \pm 0.00016$
$n_s$	0.9730	$0.975 \pm 0.012$	$\sigma_8/h^{0.5}$	1.0209	$0.999^{+0.032}_{-0.022}$	$100\theta_{\text{eq}}$	0.8206	$0.823 \pm 0.012$
$y_{\text{cal}}$	1.00024	$1.0005 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4927	$2.482 \pm 0.046$	$100\theta_{s,\text{eq}}$	0.4532	$0.4543 \pm 0.0059$
$A_{217}^{\text{CIB}}$	67.4	$64.8 \pm 6.8$	$z_{\text{re}}$	10.33	$10.7 \pm 1.8$	$r_{\text{drag}}/D_V(0.57)$	0.07221	$0.0717^{+0.0012}_{-0.0010}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.222	$2.250^{+0.092}_{-0.10}$	$H(0.57)$	94.31	$94.2 \pm 2.0$
$A_{143}^{\text{tSZ}}$	7.19	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8861	$1.889 \pm 0.020$	$D_A(0.57)$	1362.6	$1371 \pm 37$
$A_{100}^{\text{PS}}$	253.6	$262 \pm 28$	$D_{40}$	1226.7	$1226 \pm 18$	$F_{\text{AP}}(0.57)$	0.6730	$0.6757^{+0.0045}_{-0.0060}$
$A_{143}^{\text{PS}}$	39.1	$46 \pm 8$	$D_{220}$	5718.0	$5720 \pm 41$	$f\sigma_8(0.57)$	0.4892	$0.481^{+0.015}_{-0.012}$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+9}_{-10}$	$D_{810}$	2535.2	$2537 \pm 14$	$\sigma_8(0.57)$	0.6341	$0.616^{+0.029}_{-0.020}$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$D_{1420}$	814.3	$814.1 \pm 5.2$	$f_{2000}^{143}$	29.91	$31.2 \pm 3.4$
$A^{\text{kSZ}}$	0.01	$< 5.23$	$D_{2000}$	230.07	$229.5 \pm 2.2$	$f_{2000}^{143 \times 217}$	32.57	$33.4 \pm 2.5$
$A_{100}^{\text{dustTT}}$	7.38	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9730	$0.975 \pm 0.012$	$f_{2000}^{217}$	106.19	$106.9 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.8$	$Y_P$	0.24724	$0.2481 \pm 0.0034$	$\chi_{\text{lowTEB}}^2$	10495.80	$10496.9 \pm 2.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.24857	$0.2494 \pm 0.0034$	$\chi_{\text{plik}}^2$	763.8	$779.4 \pm 6.3$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.632	$2.654 \pm 0.066$	$\chi_{\text{H070p6}}^2$	0.194	$0.9 \pm 1.1$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	Age/Gyr	13.632	$13.64 \pm 0.26$	$\chi_{\text{prior}}^2$	2.07	$7.4 \pm 3.6$
$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$z_*$	1090.08	$1090.22 \pm 0.50$	$\chi_{\text{CMB}}^2$	11259.6	$11276.2 \pm 5.9$
$H_0$	69.14	$68.5 \pm 2.4$	$r_*$	143.52	$143.0 \pm 2.2$			
$\Omega_\Lambda$	0.7003	$0.689^{+0.024}_{-0.017}$	$100\theta_*$	1.04091	$1.04076 \pm 0.00065$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.82$ ;  $\Delta\chi_{\text{eff}}^2 = -1.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.53$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.83$ ;  $R - 1 = 0.01064$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.80 ( $\Delta$  -0.52) plik\_dx11dr2\_HM\_v18\_TT: 763.76 ( $\Delta$  0.09) Hubble - H070p6: 0.19 ( $\Delta$  -0.63)



#### 14.4 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022356	$0.02242 \pm 0.00024$	$\Omega_\nu h^2$	0.00001	$< 0.00135$	$100\theta_D$	0.16106	$0.16135 \pm 0.00057$
$\Omega_c h^2$	0.12083	$0.1215 \pm 0.0037$	$\Omega_m h^3$	0.09810	$0.0998^{+0.0043}_{-0.0048}$	$z_{\text{eq}}$	3382.5	$3350^{+41}_{-36}$
$100\theta_{\text{MC}}$	1.04076	$1.04070 \pm 0.00055$	$\sigma_8$	0.8472	$0.832^{+0.025}_{-0.020}$	$k_{\text{eq}}$	0.010383	$0.01036 \pm 0.00014$
$\tau$	0.0797	$0.086 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4679	$0.461^{+0.013}_{-0.011}$	$100\theta_{\text{eq}}$	0.8167	$0.8229^{+0.0068}_{-0.0080}$
$\Sigma m_\nu [\text{eV}]$	0.001	$< 0.126$	$\sigma_8 \Omega_m^{0.25}$	0.6296	$0.619^{+0.017}_{-0.015}$	$100\theta_{\text{s,eq}}$	0.45116	$0.4544^{+0.0035}_{-0.0041}$
$N_{\text{eff}}$	3.132	$3.24^{+0.22}_{-0.25}$	$\sigma_8/h^{0.5}$	1.0235	$1.004^{+0.027}_{-0.021}$	$r_{\text{drag}}/D_V(0.57)$	0.071897	$0.07184 \pm 0.00045$
$\ln(10^{10} A_s)$	3.0965	$3.111 \pm 0.041$	$\langle d^2 \rangle^{1/2}$	2.5040	$2.482 \pm 0.044$	$H(0.57)$	93.84	$94.3 \pm 1.5$
$n_s$	0.9690	$0.9753^{+0.0089}_{-0.010}$	$z_{\text{re}}$	10.13	$10.7 \pm 1.7$	$D_A(0.57)$	1372.4	$1367 \pm 24$
$y_{\text{cal}}$	1.00039	$1.0005 \pm 0.0025$	$10^9 A_s$	2.212	$2.246^{+0.085}_{-0.099}$	$F_{\text{AP}}(0.57)$	0.67440	$0.6748 \pm 0.0021$
$A_{217}^{\text{CIB}}$	67.6	$64.8 \pm 6.8$	$10^9 A_s e^{-2\tau}$	1.8861	$1.889 \pm 0.020$	$f\sigma_8(0.57)$	0.4897	$0.483^{+0.013}_{-0.011}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1233.6	$1226 \pm 16$	$\sigma_8(0.57)$	0.6314	$0.621^{+0.019}_{-0.016}$
$A_{143}^{\text{tSZ}}$	7.22	$4.9 \pm 2.0$	$D_{220}$	5722.4	$5721 \pm 41$	$f_{2000}^{143}$	29.98	$31.1 \pm 3.4$
$A_{100}^{\text{PS}}$	254.3	$262 \pm 29$	$D_{810}$	2535.1	$2537 \pm 14$	$f_{2000}^{143 \times 217}$	32.59	$33.3 \pm 2.5$
$A_{143}^{\text{PS}}$	39.1	$45 \pm 8$	$D_{1420}$	814.2	$814.1^{+5.6}_{-4.9}$	$f_{2000}^{217}$	106.17	$106.8 \pm 2.3$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{2000}$	230.16	$229.6^{+2.4}_{-2.1}$	$\chi_{\text{lowTEB}}^2$	10496.32	$10496.6 \pm 2.6$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$n_{\text{s},0.002}$	0.9690	$0.9753^{+0.0089}_{-0.010}$	$\chi_{\text{plik}}^2$	763.2	$778.9 \pm 6.1$
$A^{\text{kSZ}}$	0.01	$< 5.17$	$Y_{\text{P}}$	0.24655	$0.2480 \pm 0.0031$	$\chi_{\text{H070p6}}^2$	0.397	$0.47 \pm 0.50$
$A_{100}^{\text{dustTT}}$	7.45	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.24788	$0.2494 \pm 0.0031$	$\chi_{\text{JLA}}^2$	706.596	$706.68 \pm 0.20$
$A_{143}^{\text{dustTT}}$	9.18	$9.1 \pm 1.8$	$10^5 D/H$	2.624	$2.651 \pm 0.066$	$\chi_{6\text{DF}}^2$	0.0009	$0.050 \pm 0.071$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.2 \pm 4.2$	$\text{Age/Gyr}$	13.690	$13.62 \pm 0.21$	$\chi_{\text{MGS}}^2$	1.61	$1.59 \pm 0.62$
$A_{217}^{\text{dustTT}}$	81.9	$81.6 \pm 7.4$	$z_*$	1090.090	$1090.18 \pm 0.47$	$\chi_{\text{DR11CMass}}^2$	2.453	$2.93 \pm 0.72$
$c_{100}$	0.99790	$0.99788 \pm 0.00078$	$r_*$	143.81	$143.1 \pm 2.1$	$\chi_{\text{DR11LOWZ}}^2$	0.326	$0.55 \pm 0.55$
$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$100\theta_*$	1.04086	$1.04078 \pm 0.00066$	$\chi_{\text{prior}}^2$	2.15	$7.4 \pm 3.5$
$H_0$	68.51	$68.8 \pm 1.4$	$D_A/\text{Gpc}$	13.816	$13.75 \pm 0.20$	$\chi_{\text{CMB}}^2$	11259.5	$11275.6 \pm 5.8$
$\Omega_\Lambda$	0.6949	$0.6933^{+0.0089}_{-0.0080}$	$z_{\text{drag}}$	1060.05	$1060.31 \pm 0.87$	$\chi_{\text{BAO}}^2$	4.39	$5.1 \pm 1.1$
$\Omega_m$	0.3051	$0.3067 \pm 0.0083$	$r_{\text{drag}}$	146.46	$145.7 \pm 2.2$			
$\Omega_m h^2$	0.14319	$0.1450 \pm 0.0041$	$k_D$	0.14118	$0.1417 \pm 0.0016$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.28$ ;  $R - 1 = 0.01765$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.61 DR11CMass: 2.45 DR11LOWZ: 0.33 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.32 plik\_dx11dr2\_HM\_v18\_TT: 763.21  
Hubble - H070p6: 0.40 SN - JLA December\_2013: 706.60

## 14.5 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022199	$0.02215 \pm 0.00025$	$A_{100 \times 143}^{\text{dustTE}}$	0.1312	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	0.24509	$0.2456 \pm 0.0029$
$\Omega_c h^2$	0.11806	$0.1191 \pm 0.0031$	$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.304 \pm 0.084$	$10^5 D/H$	2.5842	$2.608 \pm 0.047$
$100\theta_{\text{MC}}$	1.040996	$1.04081 \pm 0.00045$	$A_{143}^{\text{dustTE}}$	0.155	$0.156 \pm 0.054$	Age/Gyr	13.894	$13.95^{+0.22}_{-0.26}$
$\tau$	0.0757	$0.081 \pm 0.018$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.340 \pm 0.080$	$z_*$	1089.850	$1090.07 \pm 0.38$
$\Sigma m_\nu$ [eV]	0.001	$< 0.191$	$A_{217}^{\text{dustTE}}$	1.667	$1.68 \pm 0.26$	$r_*$	145.64	$145.2 \pm 1.9$
$N_{\text{eff}}$	2.934	$2.98 \pm 0.20$	$c_{100}$	0.99822	$0.99817 \pm 0.00077$	$100\theta_*$	1.04124	$1.04112 \pm 0.00055$
$\ln(10^{10} A_s)$	3.0823	$3.095 \pm 0.039$	$c_{217}$	0.99583	$0.9960 \pm 0.0015$	$D_A/\text{Gpc}$	13.987	$13.95 \pm 0.18$
$n_s$	0.9612	$0.9610 \pm 0.0099$	$H_0$	67.12	$65.8^{+2.6}_{-1.8}$	$z_{\text{drag}}$	1059.32	$1059.32 \pm 0.86$
$y_{\text{cal}}$	1.00026	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6886	$0.668^{+0.029}_{-0.014}$	$r_{\text{drag}}$	148.38	$147.9 \pm 2.0$
$A_{217}^{\text{CIB}}$	63.4	$63.6 \pm 6.6$	$\Omega_m$	0.3114	$0.332^{+0.014}_{-0.029}$	$k_D$	0.13982	$0.1401 \pm 0.0014$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.42	—	$\Omega_m h^2$	0.14028	$0.1430^{+0.0033}_{-0.0040}$	$100\theta_D$	0.160637	$0.16079 \pm 0.00043$
$A_{143}^{\text{tSZ}}$	6.97	$5.4 \pm 1.9$	$\Omega_\nu h^2$	0.00001	$< 0.00206$	$z_{\text{eq}}$	3403.2	$3408 \pm 41$
$A_{100}^{\text{PS}}$	250.6	$259 \pm 28$	$\Omega_m h^3$	0.09415	$0.0941 \pm 0.0042$	$k_{\text{eq}}$	0.010308	$0.01035 \pm 0.00012$
$A_{143}^{\text{PS}}$	43.2	$43 \pm 8$	$\sigma_8$	0.8366	$0.807^{+0.044}_{-0.022}$	$100\theta_{\text{eq}}$	0.8126	$0.8118 \pm 0.0078$
$A_{143 \times 217}^{\text{PS}}$	44.0	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.464 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.44912	$0.4488 \pm 0.0040$
$A_{217}^{\text{PS}}$	102.6	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6249	$0.612^{+0.023}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.0706^{+0.0014}_{-0.00075}$
$A^{\text{kSZ}}$	0.00	$< 4.04$	$\sigma_8/h^{0.5}$	1.0211	$0.995^{+0.039}_{-0.020}$	$H(0.57)$	92.37	$91.8^{+1.9}_{-1.7}$
$A_{100}^{\text{dustTT}}$	7.31	$7.4 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5109	$2.509 \pm 0.040$	$D_A(0.57)$	1397.4	$1417^{+30}_{-44}$
$A_{143}^{\text{dustTT}}$	8.98	$8.9 \pm 1.8$	$z_{\text{re}}$	9.73	$10.2^{+1.8}_{-1.6}$	$F_{\text{AP}}(0.57)$	0.6760	$0.6810^{+0.0035}_{-0.0071}$
$A_{143 \times 217}^{\text{dustTT}}$	17.93	$17.0 \pm 4.2$	$10^9 A_s$	2.181	$2.210 \pm 0.085$	$f\sigma_8(0.57)$	0.4853	$0.475^{+0.018}_{-0.011}$
$A_{217}^{\text{dustTT}}$	82.5	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8742	$1.878 \pm 0.018$	$\sigma_8(0.57)$	0.6219	$0.597^{+0.037}_{-0.019}$
$A_{100}^{\text{dustEE}}$	0.0810	$0.0809 \pm 0.0056$	$D_{40}$	1243.5	$1246 \pm 16$	$f_{2000}^{143}$	27.97	$29.4 \pm 2.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04858	$0.0485 \pm 0.0050$	$D_{220}$	5729.1	$5728 \pm 39$	$f_{2000}^{143 \times 217}$	31.30	$32.1 \pm 2.2$
$A_{100 \times 217}^{\text{dustEE}}$	0.0997	$0.0999 \pm 0.033$	$D_{810}$	2534.7	$2535 \pm 14$	$f_{2000}^{217}$	104.88	$105.8 \pm 2.1$
$A_{143}^{\text{dustEE}}$	0.0999	$0.0999 \pm 0.0069$	$D_{1420}$	815.80	$815.1 \pm 4.9$	$\chi_{\text{lowTEB}}^2$	10497.35	$10498.5 \pm 2.6$
$A_{143 \times 217}^{\text{dustEE}}$	0.2261	$0.225 \pm 0.047$	$D_{2000}$	231.32	$230.6 \pm 1.9$	$\chi_{\text{plik}}^2$	2430.8	$2451.9 \pm 7.2$
$A_{217}^{\text{dustEE}}$	0.649	$0.65 \pm 0.13$	$n_{s,0.002}$	0.9612	$0.9610 \pm 0.0099$	$\chi_{\text{prior}}^2$	6.5	$19.2 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1415	$0.141 \pm 0.038$	$Y_P$	0.24377	$0.2443 \pm 0.0029$	$\chi_{\text{CMB}}^2$	12928.2	$12950.5 \pm 7.1$

Best-fit  $\chi_{\text{eff}}^2 = 12934.70$ ;  $\Delta\chi_{\text{eff}}^2 = -0.86$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.63$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.94$ ;  $R - 1 = 0.00644$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10497.35 ( $\Delta$  0.41) plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.85 ( $\Delta$  -0.80)

## 14.6 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022225	$0.02229 \pm 0.00020$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$r_*$	145.43	$144.7 \pm 1.8$
$\Omega_c h^2$	0.11831	$0.1192 \pm 0.0030$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$100\theta_*$	1.04120	$1.04105 \pm 0.00052$
$100\theta_{\text{MC}}$	1.040974	$1.04085 \pm 0.00043$	$A_{217}^{\text{dust}TE}$	1.663	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	13.967	$13.90 \pm 0.16$
$\tau$	0.0794	$0.084 \pm 0.017$	$c_{100}$	0.99824	$0.99816 \pm 0.00077$	$z_{\text{drag}}$	1059.40	$1059.69 \pm 0.73$
$\Sigma m_\nu [\text{eV}]$	0.0028	$< 0.0836$	$c_{217}$	0.99579	$0.9959 \pm 0.0015$	$r_{\text{drag}}$	148.15	$147.4 \pm 1.8$
$N_{\text{eff}}$	2.959	$3.04 \pm 0.18$	$H_0$	67.34	$67.5 \pm 1.2$	$k_D$	0.13997	$0.1405 \pm 0.0013$
$\ln(10^{10} A_s)$	3.0900	$3.101 \pm 0.036$	$\Omega_\Lambda$	0.6900	$0.6877^{+0.0084}_{-0.0074}$	$100\theta_D$	0.160690	$0.16087 \pm 0.00041$
$n_s$	0.9629	$0.9661 \pm 0.0078$	$\Omega_m$	0.3100	$0.3123^{+0.0074}_{-0.0084}$	$z_{\text{eq}}$	3397.8	$3382 \pm 28$
$y_{\text{cal}}$	1.00003	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14057	$0.1422^{+0.0031}_{-0.0034}$	$k_{\text{eq}}$	0.010310	$0.01032 \pm 0.00012$
$A_{217}^{\text{CIB}}$	62.7	$63.5 \pm 6.7$	$\Omega_\nu h^2$	0.000030	$< 0.000899$	$100\theta_{\text{eq}}$	0.8136	$0.8167 \pm 0.0054$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.50	—	$\Omega_m h^3$	0.09466	$0.0960 \pm 0.0035$	$100\theta_{\text{s,eq}}$	0.44964	$0.4512 \pm 0.0027$
$A_{143}^{\text{tSZ}}$	6.92	$5.4 \pm 1.9$	$\sigma_8$	0.8401	$0.832 \pm 0.019$	$r_{\text{drag}}/D_V(0.57)$	0.071663	$0.07155 \pm 0.00041$
$A_{100}^{\text{PS}}$	249.0	$259 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4677	$0.4648 \pm 0.0097$	$H(0.57)$	92.58	$92.9 \pm 1.3$
$A_{143}^{\text{PS}}$	44.6	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6268	$0.622 \pm 0.013$	$D_A(0.57)$	1393.6	$1389 \pm 21$
$A_{143 \times 217}^{\text{PS}}$	46.5	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0237	$1.013^{+0.021}_{-0.019}$	$F_{\text{AP}}(0.57)$	0.67564	$0.6762 \pm 0.0020$
$A_{217}^{\text{PS}}$	103.6	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5146	$2.505 \pm 0.039$	$f\sigma_8(0.57)$	0.4869	$0.484 \pm 0.010$
$A^{\text{kSZ}}$	0.00	$< 3.97$	$z_{\text{re}}$	10.07	$10.4^{+1.7}_{-1.5}$	$\sigma_8(0.57)$	0.6249	$0.619 \pm 0.015$
$A_{100}^{\text{dust}TT}$	7.30	$7.4 \pm 1.9$	$10^9 A_s$	2.198	$2.223 \pm 0.080$	$f_{2000}^{143}$	27.93	$29.1 \pm 2.9$
$A_{143}^{\text{dust}TT}$	8.95	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8749	$1.879 \pm 0.017$	$f_{2000}^{143 \times 217}$	31.25	$31.9 \pm 2.1$
$A_{143 \times 217}^{\text{dust}TT}$	18.02	$17.0 \pm 4.2$	$D_{40}$	1241.6	$1240 \pm 14$	$f_{2000}^{217}$	104.70	$105.6 \pm 2.0$
$A_{217}^{\text{dust}TT}$	82.7	$81.7 \pm 7.5$	$D_{220}$	5724.9	$5730 \pm 38$	$\chi_{\text{lowTEB}}^2$	10497.43	$10498.0 \pm 2.5$
$A_{100}^{\text{dust}EE}$	0.0810	$0.0812 \pm 0.0056$	$D_{810}$	2534.1	$2535^{+15}_{-13}$	$\chi_{\text{plik}}^2$	2430.9	$2451.1 \pm 7.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.04862	$0.0490 \pm 0.0050$	$D_{1420}$	815.57	$815.0 \pm 4.9$	$\chi_{6\text{DF}}^2$	0.0216	$0.079 \pm 0.099$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.033$	$D_{2000}$	231.25	$230.7 \pm 1.8$	$\chi_{\text{MGS}}^2$	1.28	$1.21 \pm 0.51$
$A_{143}^{\text{dust}EE}$	0.0999	$0.1004 \pm 0.0069$	$n_{\text{s},0.002}$	0.9629	$0.9661 \pm 0.0078$	$\chi_{\text{DR11CMass}}^2$	2.450	$2.98 \pm 0.82$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.224 \pm 0.047$	$Y_{\text{P}}$	0.24414	$0.2453 \pm 0.0025$	$\chi_{\text{DR11LOWZ}}^2$	0.61	$0.91 \pm 0.67$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.24547	$0.2466 \pm 0.0025$	$\chi_{\text{prior}}^2$	6.4	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141 \pm 0.038$	$10^5 D/H$	2.5885	$2.605 \pm 0.046$	$\chi_{\text{CMB}}^2$	12928.3	$12949.1 \pm 7.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	Age/Gyr	13.866	$13.81 \pm 0.18$	$\chi_{\text{BAO}}^2$	4.36	$5.2 \pm 1.2$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	$z_*$	1089.864	$1089.94 \pm 0.35$			

Best-fit  $\chi_{\text{eff}}^2 = 12939.09$ ;  $\Delta\chi_{\text{eff}}^2 = -1.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.53$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.05$ ;  $R - 1 = 0.01571$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.28 ( $\Delta$  0.06) DR11CMass: 2.45 ( $\Delta$  -0.05) DR11LOWZ: 0.61 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10497.43

( $\Delta$  0.01) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.87 ( $\Delta$  -0.66)

### 14.7 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022294	$0.02228 \pm 0.00022$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	Age/Gyr	13.753	$13.81 \pm 0.19$
$\Omega_c h^2$	0.11998	$0.1200 \pm 0.0030$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$z_*$	1090.033	$1090.06 \pm 0.37$
$100\theta_{\text{MC}}$	1.040796	$1.04075 \pm 0.00043$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.338 \pm 0.080$	$r_*$	144.37	$144.4 \pm 1.7$
$\tau$	0.0769	$0.084 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.668	$1.67 \pm 0.26$	$100\theta_*$	1.04093	$1.04095 \pm 0.00052$
$\Sigma m_\nu$ [eV]	0.001	$< 0.121$	$c_{100}$	0.99816	$0.99816 \pm 0.00077$	$D_A/\text{Gpc}$	13.869	$13.87 \pm 0.16$
$N_{\text{eff}}$	3.072	$3.07 \pm 0.19$	$c_{217}$	0.99601	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.78	$1059.75 \pm 0.77$
$\ln(10^{10} A_s)$	3.0894	$3.102 \pm 0.038$	$H_0$	68.07	$67.2^{+1.7}_{-1.5}$	$r_{\text{drag}}$	147.06	$147.1 \pm 1.8$
$n_s$	0.9660	$0.9661 \pm 0.0088$	$\Omega_\Lambda$	0.6929	$0.682^{+0.017}_{-0.011}$	$k_D$	0.14074	$0.1407 \pm 0.0013$
$y_{\text{cal}}$	1.00041	$1.0004 \pm 0.0025$	$\Omega_m$	0.3071	$0.318^{+0.011}_{-0.017}$	$100\theta_D$	0.160946	$0.16095 \pm 0.00041$
$A_{217}^{\text{CIB}}$	67.1	$63.7 \pm 6.7$	$\Omega_m h^2$	0.14228	$0.1434^{+0.0031}_{-0.0037}$	$z_{\text{eq}}$	3387.9	$3388 \pm 37$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\Omega_\nu h^2$	0.00001	$< 0.00130$	$k_{\text{eq}}$	0.010358	$0.01036 \pm 0.00012$
$A_{143}^{\text{tSZ}}$	7.24	$5.3 \pm 1.9$	$\Omega_m h^3$	0.09685	$0.0964 \pm 0.0037$	$100\theta_{\text{eq}}$	0.8155	$0.8156 \pm 0.0072$
$A_{100}^{\text{PS}}$	256.7	$260 \pm 28$	$\sigma_8$	0.8426	$0.826^{+0.028}_{-0.020}$	$100\theta_{\text{s,eq}}$	0.45059	$0.4506 \pm 0.0036$
$A_{143}^{\text{PS}}$	39.3	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4669	$0.466 \pm 0.010$	$r_{\text{drag}}/D_V(0.57)$	0.07180	$0.07126^{+0.00087}_{-0.00064}$
$A_{143 \times 217}^{\text{PS}}$	34.5	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6272	$0.620^{+0.016}_{-0.013}$	$H(0.57)$	93.37	$92.9 \pm 1.4$
$A_{217}^{\text{PS}}$	97.6	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0213	$1.008^{+0.027}_{-0.019}$	$D_A(0.57)$	1380.2	$1393^{+25}_{-29}$
$A^{\text{kSZ}}$	0.00	$< 4.13$	$\langle d^2 \rangle^{1/2}$	2.5039	$2.506 \pm 0.040$	$F_{\text{AP}}(0.57)$	0.67491	$0.6776^{+0.0029}_{-0.0043}$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$z_{\text{re}}$	9.86	$10.4^{+1.8}_{-1.5}$	$f\sigma_8(0.57)$	0.4876	$0.483^{+0.012}_{-0.010}$
$A_{143}^{\text{dust}TT}$	9.01	$8.9 \pm 1.8$	$10^9 A_s$	2.196	$2.226 \pm 0.084$	$\sigma_8(0.57)$	0.6274	$0.614^{+0.024}_{-0.016}$
$A_{143 \times 217}^{\text{dust}TT}$	17.55	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8834	$1.883 \pm 0.017$	$f_{2000}^{143}$	29.47	$29.5 \pm 2.9$
$A_{217}^{\text{dust}TT}$	81.8	$81.7 \pm 7.5$	$D_{40}$	1238.0	$1240 \pm 15$	$f_{2000}^{143 \times 217}$	32.31	$32.2 \pm 2.1$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0812 \pm 0.0058$	$D_{220}$	5729.7	$5729 \pm 38$	$f_{2000}^{217}$	105.91	$105.8 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0489 \pm 0.0050$	$D_{810}$	2535.7	$2536 \pm 14$	$\chi_{\text{lowTEB}}^2$	10496.61	$10498.0 \pm 2.5$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.033$	$D_{1420}$	814.57	$814.8 \pm 4.9$	$\chi_{\text{plik}}^2$	2431.5	$2452 \pm 14$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1003 \pm 0.0069$	$D_{2000}$	230.37	$230.4 \pm 1.8$	$\chi_{\text{H070p6}}^2$	0.58	$1.3 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2226	$0.224 \pm 0.047$	$n_{\text{s},0.002}$	0.9660	$0.9661 \pm 0.0088$	$\chi_{\text{prior}}^2$	7.1	$19.3 \pm 5.9$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$Y_{\text{P}}$	0.24572	$0.2457 \pm 0.0026$	$\chi_{\text{CMB}}^2$	12928.1	$12950 \pm 14$
$A_{100}^{\text{dust}TE}$	0.1406	$0.140 \pm 0.038$	$Y_{\text{P}}^{\text{BBN}}$	0.24704	$0.2470 \pm 0.0026$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.6148	$2.616 \pm 0.046$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.77$ ;  $\Delta\chi_{\text{eff}}^2 = -0.70$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.52$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.78$ ;  $R - 1 = 0.01068$

$\chi^2_{\text{eff}}$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.61 ( $\Delta$  -0.39) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.49 ( $\Delta$  -0.28) Hubble - H070p6: 0.58 ( $\Delta$  -0.32)

# 14.8 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022276	$0.02234 \pm 0.00019$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.337 \pm 0.080$	$D_A/\text{Gpc}$	13.937	$13.86 \pm 0.16$
$\Omega_c h^2$	0.11861	$0.1198^{+0.0028}_{-0.0032}$	$A_{217}^{\text{dust}TE}$	1.667	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.59	$1059.90 \pm 0.70$
$100\theta_{\text{MC}}$	1.040932	$1.04079 \pm 0.00042$	$c_{100}$	0.99830	$0.99815 \pm 0.00077$	$r_{\text{drag}}$	147.81	$146.9 \pm 1.7$
$\tau$	0.0817	$0.085 \pm 0.017$	$c_{217}$	0.99583	$0.9959 \pm 0.0015$	$k_D$	0.14022	$0.1408 \pm 0.0013$
$\Sigma m_\nu [\text{eV}]$	0.0022	$< 0.0799$	$H_0$	67.73	$67.9 \pm 1.1$	$100\theta_D$	0.160756	$0.16097 \pm 0.00039$
$N_{\text{eff}}$	2.999	$3.10^{+0.17}_{-0.19}$	$\Omega_\Lambda$	0.6928	$0.6902 \pm 0.0073$	$z_{\text{eq}}$	3388.3	$3375 \pm 27$
$\ln(10^{10} A_s)$	3.0961	$3.106 \pm 0.036$	$\Omega_m$	0.3072	$0.3098 \pm 0.0073$	$k_{\text{eq}}$	0.010308	$0.01034 \pm 0.00012$
$n_s$	0.9649	$0.9684 \pm 0.0074$	$\Omega_m h^2$	0.14091	$0.1429^{+0.0030}_{-0.0034}$	$100\theta_{\text{eq}}$	0.8155	$0.8180^{+0.0049}_{-0.0055}$
$y_{\text{cal}}$	1.00028	$1.0004 \pm 0.0025$	$\Omega_\nu h^2$	0.000023	$< 0.000859$	$100\theta_{s,\text{eq}}$	0.45058	$0.4519^{+0.0025}_{-0.0028}$
$A_{217}^{\text{CIB}}$	62.6	$63.6 \pm 6.7$	$\Omega_m h^3$	0.09544	$0.0971^{+0.0032}_{-0.0037}$	$r_{\text{drag}}/D_V(0.57)$	0.071806	$0.07167 \pm 0.00039$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.53	—	$\sigma_8$	0.8428	$0.836 \pm 0.019$	$H(0.57)$	92.91	$93.4 \pm 1.2$
$A_{143}^{\text{tSZ}}$	6.84	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4671	$0.4651 \pm 0.0096$	$D_A(0.57)$	1387.1	$1382 \pm 20$
$A_{100}^{\text{PS}}$	250.7	$259 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6275	$0.624 \pm 0.013$	$F_{\text{AP}}(0.57)$	0.67494	$0.6756 \pm 0.0018$
$A_{143}^{\text{PS}}$	45.4	$43 \pm 8$	$\sigma_8/h^{0.5}$	1.0241	$1.014^{+0.021}_{-0.018}$	$f\sigma_8(0.57)$	0.4878	$0.4856 \pm 0.0098$
$A_{143 \times 217}^{\text{PS}}$	47.7	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5137	$2.504 \pm 0.039$	$\sigma_8(0.57)$	0.6276	$0.622 \pm 0.014$
$A_{217}^{\text{PS}}$	104.3	$98 \pm 10$	$z_{\text{re}}$	10.26	$10.6^{+1.7}_{-1.4}$	$f_{2000}^{143}$	27.97	$29.4 \pm 2.9$
$A^{\text{kSZ}}$	0.01	$< 4.03$	$10^9 A_s$	2.211	$2.234 \pm 0.080$	$f_{2000}^{143 \times 217}$	31.39	$32.0 \pm 2.1$
$A_{100}^{\text{dust}TT}$	7.33	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8779	$1.882 \pm 0.017$	$f_{2000}^{217}$	104.90	$105.7 \pm 2.0$
$A_{143}^{\text{dust}TT}$	8.89	$8.9 \pm 1.8$	$D_{40}$	1240.3	$1238 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.34	$10497.8 \pm 2.5$
$A_{143 \times 217}^{\text{dust}TT}$	18.01	$17.0 \pm 4.2$	$D_{220}$	5730.8	$5730 \pm 38$	$\chi_{\text{plik}}^2$	2431.1	$2451.4 \pm 7.1$
$A_{217}^{\text{dust}TT}$	82.6	$81.7 \pm 7.5$	$D_{810}$	2536.0	$2536^{+15}_{-13}$	$\chi_{\text{H070p6}}^2$	0.749	$0.76 \pm 0.55$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0813 \pm 0.0056$	$D_{1420}$	815.99	$814.9 \pm 4.9$	$\chi_{\text{JLA}}^2$	706.639	$706.74 \pm 0.20$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0491 \pm 0.0050$	$D_{2000}$	231.28	$230.5 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.0061	$0.054 \pm 0.073$
$A_{100 \times 217}^{\text{dust}EE}$	0.0986	$0.099 \pm 0.033$	$n_{s,0.002}$	0.9649	$0.9684 \pm 0.0074$	$\chi_{\text{MGS}}^2$	1.47	$1.36 \pm 0.50$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1006 \pm 0.0069$	$Y_{\text{P}}$	0.24471	$0.2460 \pm 0.0024$	$\chi_{\text{DR11CMass}}^2$	2.413	$2.83 \pm 0.60$
$A_{143 \times 217}^{\text{dust}EE}$	0.2246	$0.223 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.24603	$0.2474 \pm 0.0024$	$\chi_{\text{DR11LOWZ}}^2$	0.428	$0.71 \pm 0.56$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$10^5 D/H$	2.5926	$2.613 \pm 0.045$	$\chi_{\text{prior}}^2$	6.5	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1404	$0.140 \pm 0.038$	$\text{Age/Gyr}$	13.821	$13.75 \pm 0.17$	$\chi_{\text{CMB}}^2$	12928.4	$12949.2 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1310	$0.131 \pm 0.029$	$z_*$	1089.864	$1089.98 \pm 0.35$	$\chi_{\text{BAO}}^2$	4.320	$4.95 \pm 0.89$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	$r_*$	145.11	$144.3 \pm 1.7$			
$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$100\theta_*$	1.04113	$1.04095 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 13646.60$ ;  $\bar{\chi}_{\text{eff}}^2 = 13680.95$ ;  $R - 1 = 0.01983$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMASS: 2.41 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.34 plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.10 Hubble - H070p6: 0.75 SN - JLA December\_2013: 706.64

#### 14.9 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022333	$0.02212 \pm 0.00041$	$\Omega_m$	0.2978	$0.344^{+0.031}_{-0.054}$	$D_A/\text{Gpc}$	13.894	$13.88 \pm 0.24$
$\Omega_c h^2$	0.11855	$0.1201 \pm 0.0039$	$\Omega_m h^2$	0.14093	$0.1454^{+0.0046}_{-0.0053}$	$z_{\text{drag}}$	1059.78	$1059.4 \pm 1.3$
$100\theta_{\text{MC}}$	1.04110	$1.04072 \pm 0.00059$	$\Omega_\nu h^2$	0.00005	$< 0.00405$	$r_{\text{drag}}$	147.35	$147.2 \pm 2.7$
$\tau$	0.0652	$0.076 \pm 0.020$	$\Omega_m h^3$	0.0970	$0.0950 \pm 0.0064$	$k_D$	0.14043	$0.1406 \pm 0.0020$
$\Sigma m_\nu [\text{eV}]$	0.005	$< 0.376$	$\sigma_8$	0.8268	$0.777^{+0.052}_{-0.035}$	$100\theta_D$	0.16102	$0.16109 \pm 0.00066$
$N_{\text{eff}}$	3.080	$3.07 \pm 0.31$	$\sigma_8 \Omega_m^{0.5}$	0.4512	$0.4535 \pm 0.0093$	$z_{\text{eq}}$	3351	$3391 \pm 79$
$\ln(10^{10} A_s)$	3.0610	$3.085 \pm 0.044$	$\sigma_8 \Omega_m^{0.25}$	0.6108	$0.593^{+0.020}_{-0.014}$	$k_{\text{eq}}$	0.010251	$0.01036 \pm 0.00016$
$n_s$	0.9707	$0.965 \pm 0.016$	$\sigma_8/h^{0.5}$	0.9968	$0.961^{+0.036}_{-0.022}$	$100\theta_{\text{eq}}$	0.8225	$0.815 \pm 0.015$
$y_{\text{cal}}$	0.99996	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4424	$2.472^{+0.037}_{-0.048}$	$100\theta_{\text{s,eq}}$	0.4542	$0.4505 \pm 0.0076$
$A_{217}^{\text{CIB}}$	67.5	$64.9 \pm 6.7$	$z_{\text{re}}$	8.74	$9.8 \pm 1.9$	$r_{\text{drag}}/D_V(0.57)$	0.07236	$0.0701^{+0.0023}_{-0.0018}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.135	$2.190^{+0.089}_{-0.11}$	$H(0.57)$	93.70	$91.9 \pm 2.8$
$A_{143}^{\text{tSZ}}$	7.18	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8739	$1.879 \pm 0.022$	$D_A(0.57)$	1371	$1423^{+58}_{-72}$
$A_{100}^{\text{PS}}$	254.2	$263 \pm 28$	$D_{40}$	1220.1	$1231 \pm 21$	$F_{\text{AP}}(0.57)$	0.6725	$0.6838^{+0.0081}_{-0.013}$
$A_{143}^{\text{PS}}$	39.3	$46 \pm 8$	$D_{220}$	5715.5	$5714 \pm 42$	$f\sigma_8(0.57)$	0.4760	$0.461^{+0.019}_{-0.011}$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{810}$	2531.9	$2534 \pm 14$	$\sigma_8(0.57)$	0.6181	$0.573^{+0.047}_{-0.033}$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$D_{1420}$	814.8	$814.1 \pm 5.1$	$f_{2000}^{143}$	29.99	$31.4 \pm 3.4$
$A^{\text{kSZ}}$	0.00	$< 5.25$	$D_{2000}$	230.16	$229.4 \pm 2.2$	$f_{2000}^{143 \times 217}$	32.56	$33.6 \pm 2.5$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9707	$0.965 \pm 0.016$	$f_{2000}^{217}$	106.07	$107.0 \pm 2.4$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.24584	$0.2455 \pm 0.0043$	$\chi^2_{\text{lensing}}$	9.43	$9.6 \pm 1.4$
$A_{143 \times 217}^{\text{dustTT}}$	17.69	$17.3 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.24717	$0.2468 \pm 0.0043$	$\chi^2_{\text{lowTEB}}$	10494.53	$10496.9 \pm 2.5$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.4$	$10^5 D/H$	2.610	$2.645 \pm 0.069$	$\chi^2_{\text{plik}}$	766.5	$780.5 \pm 5.8$
$c_{100}$	0.99792	$0.99787 \pm 0.00078$	$\text{Age}/\text{Gyr}$	13.726	$13.93 \pm 0.38$	$\chi^2_{\text{prior}}$	2.06	$7.5 \pm 3.6$
$c_{217}$	0.99598	$0.9961 \pm 0.0015$	$z_*$	1089.87	$1090.31 \pm 0.56$	$\chi^2_{\text{CMB}}$	11270.5	$11287.0 \pm 5.8$
$H_0$	68.80	$65.3^{+4.2}_{-3.8}$	$r_*$	144.67	$144.5 \pm 2.6$			
$\Omega_\Lambda$	0.7022	$0.656^{+0.054}_{-0.031}$	$100\theta_*$	1.04123	$1.04103 \pm 0.00070$			

Best-fit  $\chi^2_{\text{eff}} = 11272.54$ ;  $\Delta\chi^2_{\text{eff}} = 0.11$ ;  $\bar{\chi}^2_{\text{eff}} = 11294.43$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.13$ ;  $R - 1 = 0.00735$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full.pp: 9.43 ( $\Delta$  0.25) lowl\_SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10494.53 ( $\Delta$  -0.32) plik\_dx11dr2\_HM\_v18.TT: 766.52 ( $\Delta$  0.19)

## 14.10 base\_nnu\_mnu\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022260	$0.02236 \pm 0.00026$	$\Omega_m h^2$	0.14130	$0.1438 \pm 0.0044$	$r_{\text{drag}}$	147.78	$146.6 \pm 2.4$
$\Omega_c h^2$	0.11819	$0.1199 \pm 0.0038$	$\Omega_\nu h^2$	0.00084	$< 0.00191$	$k_D$	0.14012	$0.1410 \pm 0.0018$
$100\theta_{\text{MC}}$	1.04104	$1.04087 \pm 0.00057$	$\Omega_m h^3$	0.09560	$0.0980 \pm 0.0048$	$100\theta_D$	0.16093	$0.16124 \pm 0.00061$
$\tau$	0.0678	$0.077^{+0.017}_{-0.021}$	$\sigma_8$	0.8135	$0.810 \pm 0.016$	$z_{\text{eq}}$	3363.5	$3343^{+47}_{-38}$
$\Sigma m_\nu [\text{eV}]$	0.078	$< 0.177$	$\sigma_8 \Omega_m^{0.5}$	0.4519	$0.4503 \pm 0.0076$	$k_{\text{eq}}$	0.010255	$0.01029 \pm 0.00014$
$N_{\text{eff}}$	3.030	$3.17 \pm 0.26$	$\sigma_8 \Omega_m^{0.25}$	0.6064	$0.604 \pm 0.010$	$100\theta_{\text{eq}}$	0.8200	$0.8243^{+0.0072}_{-0.0092}$
$\ln(10^{10} A_s)$	3.0654	$3.087^{+0.035}_{-0.047}$	$\sigma_8/h^{0.5}$	0.9890	$0.981^{+0.019}_{-0.015}$	$100\theta_{s,\text{eq}}$	0.45299	$0.4551^{+0.0037}_{-0.0047}$
$n_s$	0.9677	$0.973 \pm 0.011$	$\langle d^2 \rangle^{1/2}$	2.4479	$2.447 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071772	$0.07171 \pm 0.00049$
$y_{\text{cal}}$	1.00019	$1.0002 \pm 0.0025$	$z_{\text{re}}$	9.00	$9.8 \pm 1.8$	$H(0.57)$	92.92	$93.7 \pm 1.6$
$A_{217}^{\text{CIB}}$	67.5	$65.0 \pm 6.6$	$10^9 A_s$	2.144	$2.192^{+0.074}_{-0.11}$	$D_A(0.57)$	1387.7	$1378 \pm 27$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8724	$1.880^{+0.023}_{-0.020}$	$F_{\text{AP}}(0.57)$	0.67529	$0.6755 \pm 0.0023$
$A_{143}^{\text{tSZ}}$	7.19	$4.9 \pm 2.0$	$D_{40}$	1226.2	$1222 \pm 15$	$f\sigma_8(0.57)$	0.4727	$0.4716 \pm 0.0077$
$A_{100}^{\text{PS}}$	254.2	$263 \pm 29$	$D_{220}$	5716.8	$5719 \pm 41$	$\sigma_8(0.57)$	0.6061	$0.603 \pm 0.013$
$A_{143}^{\text{PS}}$	39.0	$45 \pm 8$	$D_{810}$	2532.4	$2534 \pm 14$	$f_{2000}^{143}$	29.92	$31.2 \pm 3.4$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$D_{1420}$	815.05	$814.2 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.51	$33.4 \pm 2.5$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$D_{2000}$	230.30	$229.5 \pm 2.1$	$f_{2000}^{217}$	106.05	$106.9 \pm 2.4$
$A^{\text{kSZ}}$	0.00	$< 5.30$	$n_{s,0.002}$	0.9677	$0.973 \pm 0.011$	$\chi_{\text{lensing}}^2$	9.29	$9.8 \pm 1.5$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.24513	$0.2470 \pm 0.0035$	$\chi_{\text{lowTEB}}^2$	10495.01	$10495.6 \pm 1.8$
$A_{143}^{\text{dustTT}}$	9.16	$9.1 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.24646	$0.2484 \pm 0.0035$	$\chi_{\text{plik}}^2$	766.2	$780.7 \pm 5.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.73	$17.3 \pm 4.1$	$10^5 D/H$	2.607	$2.637 \pm 0.068$	$\chi_{6\text{DF}}^2$	0.0102	$0.070 \pm 0.096$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.3$	Age/Gyr	13.818	$13.71 \pm 0.23$	$\chi_{\text{MGS}}^2$	1.41	$1.42 \pm 0.63$
$c_{100}$	0.99789	$0.99788 \pm 0.00079$	$z_*$	1089.882	$1090.06 \pm 0.47$	$\chi_{\text{DR11CMAS}}^2$	2.394	$3.01 \pm 0.87$
$c_{217}$	0.99597	$0.9961 \pm 0.0014$	$r_*$	145.07	$143.9 \pm 2.3$	$\chi_{\text{DR11LOWZ}}^2$	0.478	$0.74 \pm 0.69$
$H_0$	67.66	$68.2 \pm 1.5$	$100\theta_*$	1.04126	$1.04102 \pm 0.00068$	$\chi_{\text{prior}}^2$	2.13	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6914	$0.6904 \pm 0.0090$	$D_A/\text{Gpc}$	13.932	$13.82 \pm 0.22$	$\chi_{\text{CMB}}^2$	11270.5	$11286.0 \pm 5.7$
$\Omega_m$	0.3086	$0.3096 \pm 0.0090$	$z_{\text{drag}}$	1059.55	$1060.00^{+0.91}_{-1.0}$	$\chi_{\text{BAO}}^2$	4.29	$5.2 \pm 1.3$

Best-fit  $\chi_{\text{eff}}^2 = 11276.91$ ;  $\Delta\chi_{\text{eff}}^2 = 0.17$ ;  $\bar{\chi}_{\text{eff}}^2 = 11298.71$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.02$ ;  $R - 1 = 0.02062$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMAS: 2.39 ( $\Delta$  -0.01) DR11LOWZ: 0.48 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.29 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.01 ( $\Delta$  0.15) plik\_dx11dr2\_HM\_v18\_TT: 766.20 ( $\Delta$  -0.00)



### 14.11 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022128	$0.02208 \pm 0.00025$	$A_{100 \times 217}^{\text{dust}TE}$	0.306	$0.305 \pm 0.084$	Age/Gyr	13.975	$14.04 \pm 0.22$
$\Omega_c h^2$	0.11737	$0.1184 \pm 0.0030$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$z_*$	1089.847	$1090.07 \pm 0.40$
$100\theta_{\text{MC}}$	1.041034	$1.04087 \pm 0.00046$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.340 \pm 0.080$	$r_*$	146.05	$145.6 \pm 1.9$
$\tau$	0.0616	$0.071 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.662	$1.68 \pm 0.25$	$100\theta_*$	1.04136	$1.04124 \pm 0.00055$
$\Sigma m_\nu$ [eV]	0.094	$< 0.310$	$c_{100}$	0.99817	$0.99815 \pm 0.00077$	$D_A/\text{Gpc}$	14.025	$13.98 \pm 0.17$
$N_{\text{eff}}$	2.899	$2.93 \pm 0.19$	$c_{217}$	0.99597	$0.9961 \pm 0.0015$	$z_{\text{drag}}$	1059.06	$1059.08 \pm 0.83$
$\ln(10^{10} A_s)$	3.0508	$3.071 \pm 0.037$	$H_0$	66.17	$64.8^{+2.5}_{-2.1}$	$r_{\text{drag}}$	148.82	$148.4 \pm 1.9$
$n_s$	0.9591	$0.9589 \pm 0.0095$	$\Omega_\Lambda$	0.6791	$0.658^{+0.034}_{-0.020}$	$k_D$	0.13945	$0.1398 \pm 0.0014$
$y_{\text{cal}}$	1.00001	$1.0003 \pm 0.0025$	$\Omega_m$	0.3209	$0.342^{+0.020}_{-0.034}$	$100\theta_D$	0.160637	$0.16074 \pm 0.00041$
$A_{217}^{\text{CIB}}$	67.1	$64.3 \pm 6.6$	$\Omega_m h^2$	0.14051	$0.1431^{+0.0036}_{-0.0045}$	$z_{\text{eq}}$	3400.6	$3408 \pm 41$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$\Omega_\nu h^2$	0.00101	$< 0.00333$	$k_{\text{eq}}$	0.010276	$0.01033 \pm 0.00012$
$A_{143}^{\text{tSZ}}$	7.31	$5.3 \pm 1.9$	$\Omega_m h^3$	0.09298	$0.0927 \pm 0.0039$	$100\theta_{\text{eq}}$	0.8129	$0.8116 \pm 0.0078$
$A_{100}^{\text{PS}}$	256.3	$262 \pm 28$	$\sigma_8$	0.8031	$0.778^{+0.038}_{-0.024}$	$100\theta_{s,\text{eq}}$	0.44936	$0.4487 \pm 0.0040$
$A_{143}^{\text{PS}}$	38.6	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.4543 \pm 0.0071$	$r_{\text{drag}}/D_V(0.57)$	0.07112	$0.0701^{+0.0015}_{-0.0011}$
$A_{143 \times 217}^{\text{PS}}$	33.9	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6045	$0.594^{+0.017}_{-0.011}$	$H(0.57)$	91.72	$91.1 \pm 1.6$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9873	$0.967^{+0.031}_{-0.018}$	$D_A(0.57)$	1412.3	$1433^{+34}_{-41}$
$A^{\text{kSZ}}$	0.00	$< 4.47$	$\langle d^2 \rangle^{1/2}$	2.4609	$2.476^{+0.030}_{-0.036}$	$F_{\text{AP}}(0.57)$	0.6784	$0.6836^{+0.0050}_{-0.0080}$
$A_{100}^{\text{dust}TT}$	7.44	$7.4 \pm 1.9$	$z_{\text{re}}$	8.40	$9.3 \pm 1.7$	$f\sigma_8(0.57)$	0.4700	$0.462^{+0.014}_{-0.0088}$
$A_{143}^{\text{dust}TT}$	9.04	$9.0 \pm 1.8$	$10^9 A_s$	2.113	$2.159^{+0.076}_{-0.089}$	$\sigma_8(0.57)$	0.5955	$0.574^{+0.034}_{-0.021}$
$A_{143 \times 217}^{\text{dust}TT}$	17.47	$17.2 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8684	$1.873 \pm 0.017$	$f_{2000}^{143}$	29.23	$29.9 \pm 2.9$
$A_{217}^{\text{dust}TT}$	81.6	$81.8 \pm 7.4$	$D_{40}$	1239.8	$1241 \pm 15$	$f_{2000}^{143 \times 217}$	32.10	$32.6 \pm 2.1$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0810 \pm 0.0057$	$D_{220}$	5725.0	$5727 \pm 39$	$f_{2000}^{217}$	105.58	$106.1 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0487	$0.0485 \pm 0.0050$	$D_{810}$	2531.9	$2534 \pm 14$	$\chi_{\text{lensing}}^2$	9.61	$9.7 \pm 1.5$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.0997 \pm 0.032$	$D_{1420}$	815.07	$815.2 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10496.34	$10497.4 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.09997	$0.0999 \pm 0.0068$	$D_{2000}$	230.60	$230.3 \pm 1.8$	$\chi_{\text{plik}}^2$	2433.9	$2454.2 \pm 6.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2243	$0.225 \pm 0.047$	$n_{s,0.002}$	0.9591	$0.9589 \pm 0.0095$	$\chi_{\text{prior}}^2$	7.0	$19.2 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$Y_P$	0.24327	$0.2437 \pm 0.0028$	$\chi_{\text{CMB}}^2$	12939.9	$12961.3 \pm 6.9$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.24458	$0.2450 \pm 0.0028$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.5856	$2.607 \pm 0.048$			

Best-fit  $\chi_{\text{eff}}^2 = 12946.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.33$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.54$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.42$ ;  $R - 1 = 0.01047$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.61 ( $\Delta$  -0.17) low1.SMW.70\_dx11d.2014.10\_03\_v5c\_Ap: 10496.34 ( $\Delta$  1.05) plik\_dx11dr2\_HM\_v18.TTTEEE: 2433.94 ( $\Delta$  -0.97)

## 14.12 base\_nnu\_mnu\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022169	$0.02224 \pm 0.00021$	$A_{143}^{\text{dust}TE}$	0.156	$0.153 \pm 0.053$	$r_*$	146.09	$145.4 \pm 1.8$
$\Omega_c h^2$	0.11703	$0.1179 \pm 0.0029$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.336 \pm 0.079$	$100\theta_*$	1.04142	$1.04127 \pm 0.00054$
$100\theta_{\text{MC}}$	1.041155	$1.04101 \pm 0.00044$	$A_{217}^{\text{dust}TE}$	1.658	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	14.028	$13.97 \pm 0.16$
$\tau$	0.0576	$0.067 \pm 0.015$	$c_{100}$	0.99821	$0.99814 \pm 0.00078$	$z_{\text{drag}}$	1059.13	$1059.43 \pm 0.75$
$\Sigma m_\nu [\text{eV}]$	0.002	$< 0.114$	$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	148.84	$148.1 \pm 1.8$
$N_{\text{eff}}$	2.905	$2.99 \pm 0.18$	$H_0$	67.18	$67.1 \pm 1.2$	$k_D$	0.13942	$0.1399 \pm 0.0013$
$\ln(10^{10} A_s)$	3.0419	$3.064^{+0.029}_{-0.035}$	$\Omega_\Lambda$	0.6915	$0.6866 \pm 0.0082$	$100\theta_D$	0.160629	$0.16079 \pm 0.00040$
$n_s$	0.9610	$0.9643 \pm 0.0079$	$\Omega_m$	0.3085	$0.3134 \pm 0.0082$	$z_{\text{eq}}$	3390.5	$3375^{+33}_{-28}$
$y_{\text{cal}}$	0.99975	$1.0002 \pm 0.0024$	$\Omega_m h^2$	0.13922	$0.1411 \pm 0.0032$	$k_{\text{eq}}$	0.010249	$0.01026 \pm 0.00011$
$A_{217}^{\text{CIB}}$	65.3	$64.2 \pm 6.6$	$\Omega_\nu h^2$	0.00002	$< 0.00123$	$100\theta_{\text{eq}}$	0.8149	$0.8179^{+0.0054}_{-0.0064}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^3$	0.09353	$0.0947 \pm 0.0035$	$100\theta_{\text{s,eq}}$	0.45035	$0.4519^{+0.0027}_{-0.0032}$
$A_{143}^{\text{tSZ}}$	7.18	$5.3^{+2.2}_{-2.0}$	$\sigma_8$	0.8174	$0.809 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.071769	$0.07151 \pm 0.00043$
$A_{100}^{\text{PS}}$	253.3	$261 \pm 27$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.4525 \pm 0.0064$	$H(0.57)$	92.25	$92.5 \pm 1.2$
$A_{143}^{\text{PS}}$	41.1	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.6049 \pm 0.0085$	$D_A(0.57)$	1397.7	$1397 \pm 21$
$A_{143 \times 217}^{\text{PS}}$	39.0	$39^{+10}_{-10}$	$\sigma_8/h^{0.5}$	0.9973	$0.987^{+0.015}_{-0.012}$	$F_{\text{AP}}(0.57)$	0.67526	$0.6765 \pm 0.0021$
$A_{217}^{\text{PS}}$	99.6	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.4556	$2.456 \pm 0.025$	$f\sigma_8(0.57)$	0.4734	$0.4712 \pm 0.0065$
$A^{\text{kSZ}}$	0.00	$< 4.29$	$z_{\text{re}}$	7.99	$8.9 \pm 1.5$	$\sigma_8(0.57)$	0.6083	$0.601 \pm 0.011$
$A_{100}^{\text{dust}TT}$	7.43	$7.4 \pm 1.8$	$10^9 A_s$	2.094	$2.142^{+0.061}_{-0.077}$	$f_{2000}^{143}$	28.71	$29.6 \pm 2.8$
$A_{143}^{\text{dust}TT}$	9.06	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8664	$1.872 \pm 0.017$	$f_{2000}^{143 \times 217}$	31.76	$32.2 \pm 2.1$
$A_{143 \times 217}^{\text{dust}TT}$	18.03	$17.1 \pm 4.1$	$D_{40}$	1233.7	$1234 \pm 13$	$f_{2000}^{217}$	105.25	$105.8^{+2.2}_{-1.9}$
$A_{217}^{\text{dust}TT}$	82.4	$81.8 \pm 7.4$	$D_{220}$	5721.0	$5729 \pm 38$	$\chi_{\text{lensing}}^2$	9.89	$10.1 \pm 1.7$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0815 \pm 0.0057$	$D_{810}$	2530.9	$2533 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.97	$10496.3 \pm 1.5$
$A_{100 \times 143}^{\text{dust}EE}$	0.04875	$0.0491 \pm 0.0049$	$D_{1420}$	815.23	$815.3 \pm 4.8$	$\chi_{\text{plik}}^2$	2434.3	$2453.9 \pm 6.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.033$	$D_{2000}$	230.79	$230.5 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.010	$0.09 \pm 0.11$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1005 \pm 0.0067$	$n_{\text{s},0.002}$	0.9610	$0.9643 \pm 0.0079$	$\chi_{\text{MGS}}^2$	1.41	$1.16 \pm 0.52$
$A_{143 \times 217}^{\text{dust}EE}$	0.2250	$0.224 \pm 0.046$	$Y_{\text{P}}$	0.24337	$0.2445 \pm 0.0026$	$\chi_{\text{DR11CMass}}^2$	2.40	$3.07 \pm 0.93$
$A_{217}^{\text{dust}EE}$	0.656	$0.66 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.24468	$0.2458 \pm 0.0026$	$\chi_{\text{DR11LOWZ}}^2$	0.48	$0.99 \pm 0.74$
$A_{100}^{\text{dust}TE}$	0.1412	$0.142 \pm 0.038$	$10^5 \text{D}/\text{H}$	2.5799	$2.594 \pm 0.045$	$\chi_{\text{prior}}^2$	6.7	$19.4 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.131 \pm 0.029$	$\text{Age}/\text{Gyr}$	13.918	$13.88 \pm 0.18$	$\chi_{\text{CMB}}^2$	12940.2	$12960.3 \pm 6.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.307 \pm 0.083$	$z_*$	1089.765	$1089.83 \pm 0.34$	$\chi_{\text{BAO}}^2$	4.29	$5.3 \pm 1.4$

Best-fit  $\chi_{\text{eff}}^2 = 12951.19$ ;  $\Delta\chi_{\text{eff}}^2 = -0.39$ ;  $\bar{\chi}_{\text{eff}}^2 = 12985.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.37$ ;  $R - 1 = 0.04453$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.41 ( $\Delta$  0.13) DR11CMass: 2.40 ( $\Delta$  -0.05) DR11LOWZ: 0.48 ( $\Delta$  -0.13) CMB - smica\_g30\_ftl\_full\_pp: 9.88 ( $\Delta$  0.21) lowl\_SMW\_70\_dx11d\_2014\_10\_03

10495.97 ( $\Delta$  0.76) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.35 ( $\Delta$  -0.95)

# 15 nnu+r

## 15.1 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup39

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022591	$0.02260 \pm 0.00024$	$\Omega_m h^3$	0.103769	$0.10376 \pm 0.00049$	$100\theta_D$	0.161723	$0.16174 \pm 0.00027$
$\Omega_c h^2$	0.12382	$0.1236 \pm 0.0023$	$\sigma_8$	0.8507	$0.849 \pm 0.015$	$z_{\text{eq}}$	3324.7	$3319 \pm 49$
$100\theta_{\text{MC}}$	1.040492	$1.04054 \pm 0.00048$	$\sigma_8 \Omega_m^{0.5}$	0.4623	$0.460 \pm 0.013$	$k_{\text{eq}}$	0.010410	$0.01039 \pm 0.00015$
$\tau$	0.0904	$0.089 \pm 0.020$	$\sigma_8 \Omega_m^{0.25}$	0.6271	$0.625 \pm 0.013$	$100\theta_{\text{eq}}$	0.8280	$0.8292 \pm 0.0097$
$\ln(10^{10} A_s)$	3.1252	$3.122 \pm 0.038$	$\sigma_8/h^{0.5}$	1.0127	$1.010 \pm 0.020$	$100\theta_{s,\text{eq}}$	0.4569	$0.4575 \pm 0.0050$
$n_s$	0.9838	$0.9843 \pm 0.0064$	$\langle d^2 \rangle^{1/2}$	2.4767	$2.470 \pm 0.047$	$r_{\text{drag}}/D_V(0.57)$	0.07243	$0.07253 \pm 0.00078$
$r$	0.0003	$< 0.0587$	$z_{\text{re}}$	11.13	$10.9^{+1.9}_{-1.6}$	$H(0.57)$	95.927	$95.98 \pm 0.47$
$y_{\text{cal}}$	1.00035	$1.0005 \pm 0.0025$	$10^9 A_s$	2.277	$2.271 \pm 0.087$	$D_A(0.57)$	1337.4	$1336 \pm 13$
$A_{217}^{\text{CIB}}$	68.6	$65.3 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.9001	$1.899 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.67188	$0.6716 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1214.8	$1231^{+17}_{-20}$	$f\sigma_8(0.57)$	0.4901	$0.4884 \pm 0.0098$
$A_{143}^{\text{tSZ}}$	7.04	$4.8 \pm 2.0$	$D_{220}$	5717.9	$5719 \pm 41$	$\sigma_8(0.57)$	0.6370	$0.636 \pm 0.012$
$A_{100}^{\text{PS}}$	259.0	$264 \pm 28$	$D_{810}$	2538.9	$2539 \pm 14$	$r_{0.002}$	0.0002	$< 0.0572$
$A_{143}^{\text{PS}}$	42.5	$47 \pm 8$	$D_{1420}$	813.7	$813.7 \pm 5.1$	$r_{0.01}$	0.0003	$< 0.0580$
$A_{143 \times 217}^{\text{PS}}$	34.8	$40^{+10}_{-10}$	$D_{2000}$	228.92	$228.9 \pm 1.9$	$\ln(10^{10} A_t)$	-5.14	$-0.38^{+1.4}_{-0.65}$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$n_{s,0.002}$	0.9838	$0.9843 \pm 0.0064$	$r_{10}$	0.0001	$< 0.0285$
$A^{\text{kSZ}}$	0.09	$< 5.41$	$Y_{\text{P}}$	0.250642	$0.25064 \pm 0.00010$	$10^9 A_t$	0.001	$< 0.134$
$A_{100}^{\text{dustTT}}$	7.47	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.251987	$0.25199 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.111$
$A_{143}^{\text{dustTT}}$	9.16	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6830	$2.683 \pm 0.045$	$f_{2000}^{143}$	31.50	$31.9 \pm 3.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.99	$17.3 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.4128	$13.409 \pm 0.039$	$f_{2000}^{143 \times 217}$	33.92	$34.0 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$z_*$	1090.352	$1090.33 \pm 0.44$	$f_{2000}^{217}$	107.34	$107.5 \pm 2.0$
$c_{100}$	0.99790	$0.99788 \pm 0.00077$	$r_*$	141.421	$141.48 \pm 0.48$	$\chi_{\text{lowTEB}}^2$	10495.13	$10497.5 \pm 3.1$
$c_{217}$	0.99613	$0.9961 \pm 0.0015$	$100\theta_*$	1.040406	$1.04046 \pm 0.00047$	$\chi_{\text{plik}}^2$	766.2	$779.7 \pm 5.9$
$H_0$	70.56	$70.7 \pm 1.0$	$D_A/\text{Gpc}$	13.5928	$13.598 \pm 0.044$	$\chi_{\text{prior}}^2$	2.12	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.7047	$0.706 \pm 0.013$	$z_{\text{drag}}$	1061.039	$1061.02 \pm 0.47$	$\chi_{\text{CMB}}^2$	11261.3	$11277.2 \pm 5.7$
$\Omega_m$	0.2953	$0.294 \pm 0.013$	$r_{\text{drag}}$	143.971	$144.03 \pm 0.48$			
$\Omega_m h^2$	0.14706	$0.1468 \pm 0.0022$	$k_D$	0.14291	$0.14285 \pm 0.00053$			

Best-fit  $\chi_{\text{eff}}^2 = 11263.45$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.71$ ;  $R - 1 = 0.00534$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.13 plik\_dx11dr2\_HM\_v18\_TT: 766.20

## 15.2 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnup39

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022618	$0.02260 \pm 0.00016$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.338 \pm 0.080$	$D_A/\text{Gpc}$	13.5690	$13.572 \pm 0.029$
$\Omega_c h^2$	0.12489	$0.1248 \pm 0.0015$	$A_{217}^{\text{dustTE}}$	1.659	$1.67 \pm 0.26$	$z_{\text{drag}}$	1061.153	$1061.12 \pm 0.31$
$100\theta_{\text{MC}}$	1.040251	$1.04026 \pm 0.00032$	$c_{100}$	0.99814	$0.99812 \pm 0.00078$	$r_{\text{drag}}$	143.677	$143.72 \pm 0.31$
$\tau$	0.0935	$0.089 \pm 0.017$	$c_{217}$	0.99616	$0.9961 \pm 0.0014$	$k_D$	0.143256	$0.14320 \pm 0.00034$
$\ln(10^{10} A_s)$	3.1344	$3.126 \pm 0.033$	$H_0$	70.13	$70.15 \pm 0.68$	$100\theta_D$	0.161618	$0.16164 \pm 0.00018$
$n_s$	0.9810	$0.9812 \pm 0.0050$	$\Omega_\Lambda$	0.6988	$0.6991 \pm 0.0087$	$z_{\text{eq}}$	3349.7	$3347 \pm 33$
$r$	0.0001	$< 0.0595$	$\Omega_m$	0.3012	$0.3009 \pm 0.0087$	$k_{\text{eq}}$	0.010488	$0.01048 \pm 0.00010$
$y_{\text{cal}}$	1.00035	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14816	$0.1480 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8233	$0.8237 \pm 0.0064$
$A_{217}^{\text{CIB}}$	68.7	$65.4 \pm 6.6$	$\Omega_m h^3$	0.103901	$0.10385 \pm 0.00032$	$100\theta_{s,\text{eq}}$	0.45439	$0.4546 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8570	$0.853 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07205	$0.07209 \pm 0.00051$
$A_{143}^{\text{tSZ}}$	7.19	$5.1 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4704	$0.468 \pm 0.010$	$H(0.57)$	95.773	$95.78 \pm 0.30$
$A_{100}^{\text{PS}}$	261.1	$266 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6349	$0.632 \pm 0.011$	$D_A(0.57)$	1342.6	$1342.4 \pm 8.6$
$A_{143}^{\text{PS}}$	41.5	$46 \pm 8$	$\sigma_8/h^{0.5}$	1.0234	$1.019 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67341	$0.6733 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	34.5	$41_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.5047	$2.493 \pm 0.040$	$f\sigma_8(0.57)$	0.4954	$0.4930 \pm 0.0082$
$A_{217}^{\text{PS}}$	97.5	$97 \pm 10$	$z_{\text{re}}$	11.42	$11.0_{-1.4}^{+1.6}$	$\sigma_8(0.57)$	0.6402	$0.637 \pm 0.011$
$A^{\text{kSZ}}$	0.00	$< 4.92$	$10^9 A_s$	2.298	$2.279 \pm 0.076$	$r_{0.002}$	0.0001	$< 0.0573$
$A_{100}^{\text{dustTT}}$	7.60	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.9055	$1.905 \pm 0.013$	$r_{0.01}$	0.0001	$< 0.0584$
$A_{143}^{\text{dustTT}}$	9.07	$9.1 \pm 1.8$	$D_{40}$	1223.9	$1239_{-20}^{+16}$	$\ln(10^{10} A_t)$	-6.46	$-0.35_{-0.60}^{+1.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.1$	$D_{220}$	5726.4	$5724 \pm 39$	$r_{10}$	0.0000	$< 0.0287$
$A_{217}^{\text{dustTT}}$	81.7	$81.5 \pm 7.4$	$D_{810}$	2540.1	$2540 \pm 14$	$10^9 A_t$	0.000	$< 0.135$
$A_{100}^{\text{dustEE}}$	0.0819	$0.0814 \pm 0.0057$	$D_{1420}$	813.42	$813.5 \pm 4.9$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.113$
$A_{100 \times 143}^{\text{dustEE}}$	0.04979	$0.0490 \pm 0.0050$	$D_{2000}$	229.02	$228.9 \pm 1.6$	$f_{2000}^{143}$	31.07	$31.4 \pm 2.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.0982	$0.099 \pm 0.033$	$n_{s,0.002}$	0.9810	$0.9812 \pm 0.0050$	$f_{2000}^{143 \times 217}$	33.65	$33.8 \pm 1.9$
$A_{143}^{\text{dustEE}}$	0.1013	$0.1004 \pm 0.0069$	$Y_P$	0.250654	$0.250648 \pm 0.000070$	$f_{2000}^{217}$	107.09	$107.2 \pm 1.9$
$A_{143 \times 217}^{\text{dustEE}}$	0.2213	$0.221 \pm 0.046$	$Y_P^{\text{BBN}}$	0.252000	$0.251993 \pm 0.000070$	$\chi_{\text{lowTEB}}^2$	10496.27	$10498.1 \pm 3.0$
$A_{217}^{\text{dustEE}}$	0.639	$0.64 \pm 0.13$	$10^5 D/H$	2.6778	$2.681 \pm 0.030$	$\chi_{\text{plik}}^2$	2436.9	$2456.1 \pm 6.9$
$A_{100}^{\text{dustTE}}$	0.1400	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.4215	$13.422 \pm 0.026$	$\chi_{\text{prior}}^2$	7.5	$19.7 \pm 5.6$
$A_{100 \times 143}^{\text{dustTE}}$	0.1317	$0.132 \pm 0.029$	$z_*$	1090.407	$1090.42 \pm 0.30$	$\chi_{\text{CMB}}^2$	12933.2	$12954.3 \pm 6.9$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.084$	$r_*$	141.140	$141.18 \pm 0.31$			
$A_{143}^{\text{dustTE}}$	0.155	$0.156 \pm 0.054$	$100\theta_*$	1.040170	$1.04017 \pm 0.00032$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.62$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.98$ ;  $R - 1 = 0.01087$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d.2014.10.03.v5c\_Ap: 10496.26 plik\_dx11dr2\_HM\_v18\_TTTEE: 2436.89

### 15.3 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup57

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022748	$0.02275 \pm 0.00024$	$\Omega_m h^3$	0.10744	$0.10740 \pm 0.00051$	$100\theta_D$	0.162088	$0.16210 \pm 0.00027$
$\Omega_c h^2$	0.12568	$0.1254 \pm 0.0024$	$\sigma_8$	0.8603	$0.857 \pm 0.016$	$z_{\text{eq}}$	3294.9	$3288 \pm 50$
$100\theta_{\text{MC}}$	1.040388	$1.04041 \pm 0.00048$	$\sigma_8 \Omega_m^{0.5}$	0.4609	$0.458 \pm 0.014$	$k_{\text{eq}}$	0.010434	$0.01041 \pm 0.00016$
$\tau$	0.0965	$0.094 \pm 0.020$	$\sigma_8 \Omega_m^{0.25}$	0.6297	$0.626 \pm 0.014$	$100\theta_{\text{eq}}$	0.8341	$0.836 \pm 0.010$
$\ln(10^{10} A_s)$	3.1416	$3.135 \pm 0.038$	$\sigma_8/h^{0.5}$	1.0134	$1.008 \pm 0.020$	$100\theta_{s,\text{eq}}$	0.4599	$0.4607 \pm 0.0051$
$n_s$	0.9910	$0.9922 \pm 0.0065$	$\langle d^2 \rangle^{1/2}$	2.4697	$2.456 \pm 0.047$	$r_{\text{drag}}/D_V(0.57)$	0.07291	$0.07303 \pm 0.00080$
$r$	0.0001	$< 0.0673$	$z_{\text{re}}$	11.67	$11.3^{+1.8}_{-1.6}$	$H(0.57)$	97.34	$97.40 \pm 0.49$
$y_{\text{cal}}$	1.00028	$1.0005 \pm 0.0025$	$10^9 A_s$	2.314	$2.301 \pm 0.088$	$D_A(0.57)$	1313.7	$1312 \pm 13$
$A_{217}^{\text{CIB}}$	68.8	$66.1 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.9080	$1.907 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.66970	$0.6693 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1207.6	$1224^{+18}_{-22}$	$f\sigma_8(0.57)$	0.4931	$0.490 \pm 0.010$
$A_{143}^{\text{tSZ}}$	6.02	$4.6 \pm 2.0$	$D_{220}$	5721.1	$5720 \pm 41$	$\sigma_8(0.57)$	0.6465	$0.644 \pm 0.012$
$A_{100}^{\text{PS}}$	266.5	$268 \pm 28$	$D_{810}$	2539.8	$2540 \pm 14$	$r_{0.002}$	0.0001	$< 0.0673$
$A_{143}^{\text{PS}}$	43.9	$48 \pm 8$	$D_{1420}$	812.5	$813.0 \pm 5.1$	$r_{0.01}$	0.0001	$< 0.0673$
$A_{143 \times 217}^{\text{PS}}$	33.3	$40^{+9}_{-10}$	$D_{2000}$	228.00	$228.1 \pm 1.9$	$\ln(10^{10} A_t)$	-5.74	$-0.23^{+1.4}_{-0.61}$
$A_{217}^{\text{PS}}$	95.9	$97 \pm 10$	$n_{s,0.002}$	0.9910	$0.9922 \pm 0.0065$	$r_{10}$	0.0001	$< 0.0335$
$A^{\text{kSZ}}$	1.91	$< 5.86$	$Y_{\text{P}}$	0.252986	$0.25299 \pm 0.00010$	$10^9 A_t$	0.000	$< 0.154$
$A_{100}^{\text{dustTT}}$	7.52	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.254340	$0.25434 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.128$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.7140	$2.714 \pm 0.045$	$f_{2000}^{143}$	32.88	$32.9 \pm 3.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.30	$17.3 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.2371	$13.234 \pm 0.039$	$f_{2000}^{143 \times 217}$	34.84	$34.8 \pm 2.1$
$A_{217}^{\text{dustTT}}$	81.3	$81.7 \pm 7.4$	$z_*$	1090.482	$1090.45 \pm 0.44$	$f_{2000}^{217}$	108.18	$108.2 \pm 2.0$
$c_{100}$	0.99790	$0.99789 \pm 0.00078$	$r_*$	140.026	$140.10 \pm 0.48$	$\chi_{\text{lowTEB}}^2$	10495.06	$10497.2 \pm 3.2$
$c_{217}$	0.99610	$0.9962 \pm 0.0015$	$100\theta_*$	1.040176	$1.04020 \pm 0.00047$	$\chi_{\text{plik}}^2$	767.7	$781.4 \pm 6.0$
$H_0$	72.07	$72.2 \pm 1.1$	$D_A/\text{Gpc}$	13.4618	$13.469 \pm 0.045$	$\chi_{\text{prior}}^2$	2.25	$7.5 \pm 3.6$
$\Omega_\Lambda$	0.7130	$0.714 \pm 0.013$	$z_{\text{drag}}$	1061.649	$1061.64 \pm 0.46$	$\chi_{\text{CMB}}^2$	11262.8	$11278.6 \pm 5.8$
$\Omega_m$	0.2870	$0.286 \pm 0.013$	$r_{\text{drag}}$	142.510	$142.59 \pm 0.48$			
$\Omega_m h^2$	0.14908	$0.1488 \pm 0.0022$	$k_D$	0.14398	$0.14389 \pm 0.00053$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.06$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.10$ ;  $R - 1 = 0.01002$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.06 plik\_dx11dr2\_HM\_v18\_TT: 767.74

## 15.4 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnup57

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022779	$0.02276 \pm 0.00016$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.336 \pm 0.081$	$D_A/\text{Gpc}$	13.4301	$13.432 \pm 0.029$
$\Omega_c h^2$	0.12718	$0.1272 \pm 0.0016$	$A_{217}^{\text{dustTE}}$	1.665	$1.66 \pm 0.26$	$z_{\text{drag}}$	1061.840	$1061.78 \pm 0.30$
$100\theta_{\text{MC}}$	1.040045	$1.04004 \pm 0.00032$	$c_{100}$	0.99812	$0.99810 \pm 0.00077$	$r_{\text{drag}}$	142.115	$142.14 \pm 0.30$
$\tau$	0.0983	$0.094 \pm 0.017$	$c_{217}$	0.99617	$0.9962 \pm 0.0014$	$k_D$	0.144444	$0.14440 \pm 0.00034$
$\ln(10^{10} A_s)$	3.1487	$3.141 \pm 0.034$	$H_0$	71.45	$71.44 \pm 0.70$	$100\theta_D$	0.161946	$0.16198 \pm 0.00018$
$n_s$	0.98809	$0.9884 \pm 0.0049$	$\Omega_\Lambda$	0.7050	$0.7048 \pm 0.0086$	$z_{\text{eq}}$	3328.9	$3328 \pm 33$
$r$	0.0001	$< 0.0648$	$\Omega_m$	0.2950	$0.2952 \pm 0.0086$	$k_{\text{eq}}$	0.010542	$0.01054 \pm 0.00010$
$y_{\text{cal}}$	1.00025	$1.0006 \pm 0.0025$	$\Omega_m h^2$	0.15061	$0.1506 \pm 0.0015$	$100\theta_{\text{eq}}$	0.8275	$0.8276 \pm 0.0065$
$A_{217}^{\text{CIB}}$	69.1	$66.1 \pm 6.6$	$\Omega_m h^3$	0.107613	$0.10757 \pm 0.00033$	$100\theta_{s,\text{eq}}$	0.45649	$0.4565 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8671	$0.864 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07238	$0.07238 \pm 0.00052$
$A_{143}^{\text{tSZ}}$	7.05	$5.0 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4709	$0.4694 \pm 0.0099$	$H(0.57)$	97.109	$97.10 \pm 0.32$
$A_{100}^{\text{PS}}$	263.6	$268 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6390	$0.637 \pm 0.011$	$D_A(0.57)$	1321.0	$1321.3 \pm 8.6$
$A_{143}^{\text{PS}}$	42.8	$47 \pm 8$	$\sigma_8/h^{0.5}$	1.0258	$1.022 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67179	$0.6718 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	35.1	$41_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.4995	$2.490 \pm 0.040$	$f\sigma_8(0.57)$	0.4994	$0.4976 \pm 0.0083$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$z_{\text{re}}$	11.86	$11.5_{-1.4}^{+1.6}$	$\sigma_8(0.57)$	0.6494	$0.647 \pm 0.011$
$A^{\text{kSZ}}$	0.48	$< 5.27$	$10^9 A_s$	2.331	$2.314 \pm 0.078$	$r_{0.002}$	0.0001	$< 0.0641$
$A_{100}^{\text{dustTT}}$	7.56	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.9145	$1.915 \pm 0.012$	$r_{0.01}$	0.0001	$< 0.0645$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$D_{40}$	1215.9	$1233_{-20}^{+15}$	$\ln(10^{10} A_t)$	-5.85	$-0.26_{-0.59}^{+1.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.84	$17.4 \pm 4.2$	$D_{220}$	5724.6	$5723 \pm 39$	$r_{10}$	0.0001	$< 0.0319$
$A_{217}^{\text{dustTT}}$	81.8	$81.6 \pm 7.4$	$D_{810}$	2541.2	$2543 \pm 14$	$10^9 A_t$	0.000	$< 0.150$
$A_{100}^{\text{dustEE}}$	0.0826	$0.0817 \pm 0.0056$	$D_{1420}$	812.47	$813.0 \pm 4.8$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.124$
$A_{100 \times 143}^{\text{dustEE}}$	0.0502	$0.0493 \pm 0.0050$	$D_{2000}$	228.23	$228.3 \pm 1.6$	$f_{2000}^{143}$	32.02	$32.2 \pm 2.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.0977	$0.099 \pm 0.033$	$n_{s,0.002}$	0.98809	$0.9884 \pm 0.0049$	$f_{2000}^{143 \times 217}$	34.46	$34.4 \pm 1.9$
$A_{143}^{\text{dustEE}}$	0.1016	$0.1009 \pm 0.0070$	$Y_P$	0.253000	$0.252991 \pm 0.000070$	$f_{2000}^{217}$	107.76	$107.8 \pm 1.9$
$A_{143 \times 217}^{\text{dustEE}}$	0.2187	$0.219 \pm 0.047$	$Y_P^{\text{BBN}}$	0.254354	$0.254344 \pm 0.000070$	$\chi_{\text{lowTEB}}^2$	10495.97	$10497.9 \pm 3.1$
$A_{217}^{\text{dustEE}}$	0.643	$0.64 \pm 0.13$	$10^5 D/H$	2.7081	$2.712 \pm 0.030$	$\chi_{\text{plik}}^2$	2441.2	$2460.4 \pm 7.1$
$A_{100}^{\text{dustTE}}$	0.1408	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.2503	$13.252 \pm 0.026$	$\chi_{\text{prior}}^2$	7.9	$20 \pm 6$
$A_{100 \times 143}^{\text{dustTE}}$	0.1315	$0.132 \pm 0.029$	$z_*$	1090.572	$1090.60 \pm 0.30$	$\chi_{\text{CMB}}^2$	12937.2	$12958.3 \pm 6.9$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.302 \pm 0.084$	$r_*$	139.650	$139.67 \pm 0.31$			
$A_{143}^{\text{dustTE}}$	0.152	$0.156 \pm 0.054$	$100\theta_*$	1.039830	$1.03983 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12945.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 12978.32$ ;  $R - 1 = 0.01145$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d.2014.10.03.v5c\_Ap: 10495.97 plik\_dx11dr2\_HM\_v18\_TTTEE: 2441.22

### 15.5 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup39\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022623	$0.02262 \pm 0.00023$	$\Omega_m h^3$	0.103706	$0.10364 \pm 0.00047$	$100\theta_D$	0.161740	$0.16176 \pm 0.00026$
$\Omega_c h^2$	0.12273	$0.1225 \pm 0.0021$	$\sigma_8$	0.8364	$0.8358 \pm 0.0098$	$z_{\text{eq}}$	3300.6	$3294 \pm 45$
$100\theta_{\text{MC}}$	1.040648	$1.04065 \pm 0.00046$	$\sigma_8 \Omega_m^{0.5}$	0.4499	$0.4486 \pm 0.0090$	$k_{\text{eq}}$	0.010334	$0.01031 \pm 0.00014$
$\tau$	0.0791	$0.079 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6134	$0.6123 \pm 0.0079$	$100\theta_{\text{eq}}$	0.8327	$0.8340 \pm 0.0090$
$\ln(10^{10} A_s)$	3.0993	$3.099 \pm 0.030$	$\sigma_8/h^{0.5}$	0.9924	$0.991 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.45933	$0.4600 \pm 0.0046$
$n_s$	0.9850	$0.9861 \pm 0.0063$	$\langle d^2 \rangle^{1/2}$	2.4311	$2.427 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.07281	$0.07290 \pm 0.00073$
$r$	0.0003	$< 0.0704$	$z_{\text{re}}$	10.09	$10.1^{+1.6}_{-1.4}$	$H(0.57)$	96.115	$96.15 \pm 0.45$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0025$	$10^9 A_s$	2.218	$2.220^{+0.064}_{-0.072}$	$D_A(0.57)$	1331.7	$1331 \pm 12$
$A_{217}^{\text{CIB}}$	67.7	$65.8 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8937	$1.893 \pm 0.013$	$F_{\text{AP}}(0.57)$	0.67031	$0.6700 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{40}$	1205.9	$1225^{+16}_{-22}$	$f\sigma_8(0.57)$	0.4801	$0.4793 \pm 0.0056$
$A_{143}^{\text{tSZ}}$	6.16	$4.8 \pm 2.0$	$D_{220}$	5719.8	$5717 \pm 41$	$\sigma_8(0.57)$	0.6279	$0.6278 \pm 0.0088$
$A_{100}^{\text{PS}}$	264.2	$265 \pm 28$	$D_{810}$	2535.9	$2536 \pm 14$	$r_{0.002}$	0.0003	$< 0.0694$
$A_{143}^{\text{PS}}$	42.4	$47 \pm 8$	$D_{1420}$	813.1	$813.4 \pm 5.1$	$r_{0.01}$	0.0003	$< 0.0699$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39^{+9}_{-10}$	$D_{2000}$	228.42	$228.5 \pm 1.8$	$\ln(10^{10} A_t)$	-4.89	$-0.20^{+1.3}_{-0.59}$
$A_{217}^{\text{PS}}$	95.7	$96 \pm 10$	$n_{s,0.002}$	0.9850	$0.9861 \pm 0.0063$	$r_{10}$	0.0002	$< 0.0348$
$A^{\text{kSZ}}$	2.05	$< 5.82$	$Y_{\text{P}}$	0.250656	$0.25065 \pm 0.00010$	$10^9 A_t$	0.001	$< 0.156$
$A_{100}^{\text{dustTT}}$	7.61	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.252001	$0.25200 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.001	$< 0.133$
$A_{143}^{\text{dustTT}}$	9.32	$9.1 \pm 1.8$	$10^5 \text{D/H}$	2.6769	$2.679 \pm 0.044$	$f_{2000}^{143}$	32.37	$32.4 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	18.05	$17.4 \pm 4.1$	$\text{Age/Gyr}$	13.4003	$13.399 \pm 0.038$	$f_{2000}^{143 \times 217}$	34.31	$34.4 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.9	$81.8 \pm 7.4$	$z_*$	1090.216	$1090.21 \pm 0.42$	$f_{2000}^{217}$	107.69	$107.7 \pm 2.0$
$c_{100}$	0.99791	$0.99787 \pm 0.00078$	$r_*$	141.665	$141.74 \pm 0.44$	$\chi_{\text{lensing}}^2$	9.40	$9.99 \pm 1.5$
$c_{217}$	0.99614	$0.9961 \pm 0.0015$	$100\theta_*$	1.040562	$1.04057 \pm 0.00045$	$\chi_{\text{lowTEB}}^2$	10493.57	$10496.0 \pm 2.2$
$H_0$	71.03	$71.13 \pm 0.97$	$D_A/\text{Gpc}$	13.6142	$13.621 \pm 0.041$	$\chi_{\text{plik}}^2$	768.8	$781.5 \pm 5.5$
$\Omega_\Lambda$	0.7107	$0.712 \pm 0.012$	$z_{\text{drag}}$	1061.001	$1060.98 \pm 0.46$	$\chi_{\text{prior}}^2$	2.40	$7.6 \pm 3.6$
$\Omega_m$	0.2893	$0.288 \pm 0.012$	$r_{\text{drag}}$	144.213	$144.29 \pm 0.43$	$\chi_{\text{CMB}}^2$	11271.7	$11287.4 \pm 5.8$
$\Omega_m h^2$	0.14599	$0.1457 \pm 0.0020$	$k_D$	0.142672	$0.14258 \pm 0.00048$			

Best-fit  $\chi_{\text{eff}}^2 = 11274.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11295.00$ ;  $R - 1 = 0.00927$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.40 lowl\_SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10493.57 plik\_dx11dr2\_HM\_v18.TT: 768.76



## 15.6 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnup39\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022626	$0.02261 \pm 0.00016$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.335 \pm 0.081$	$D_A/\text{Gpc}$	13.5838	$13.585 \pm 0.028$
$\Omega_c h^2$	0.12418	$0.1242 \pm 0.0015$	$A_{217}^{\text{dustTE}}$	1.662	$1.66 \pm 0.25$	$z_{\text{drag}}$	1061.115	$1061.09 \pm 0.31$
$100\theta_{\text{MC}}$	1.040341	$1.04035 \pm 0.00031$	$c_{100}$	0.99811	$0.99807 \pm 0.00078$	$r_{\text{drag}}$	143.845	$143.86 \pm 0.29$
$\tau$	0.0735	$0.071 \pm 0.014$	$c_{217}$	0.99643	$0.9962 \pm 0.0014$	$k_D$	0.143079	$0.14304 \pm 0.00032$
$\ln(10^{10} A_s)$	3.0904	$3.086 \pm 0.025$	$H_0$	70.42	$70.41 \pm 0.67$	$100\theta_D$	0.161642	$0.16167 \pm 0.00018$
$n_s$	0.98202	$0.9821 \pm 0.0049$	$\Omega_\Lambda$	0.7026	$0.7025 \pm 0.0084$	$z_{\text{eq}}$	3333.8	$3333 \pm 32$
$r$	0.0067	$< 0.0724$	$\Omega_m$	0.2974	$0.2975 \pm 0.0084$	$k_{\text{eq}}$	0.010438	$0.010436 \pm 0.000099$
$y_{\text{cal}}$	0.99945	$1.0002 \pm 0.0024$	$\Omega_m h^2$	0.14746	$0.1474 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8263	$0.8264 \pm 0.0062$
$A_{217}^{\text{CIB}}$	69.4	$66.4 \pm 6.6$	$\Omega_m h^3$	0.103832	$0.10380 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45597	$0.4560 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8364	$0.8348 \pm 0.0089$	$r_{\text{drag}}/D_V(0.57)$	0.072289	$0.07229 \pm 0.00050$
$A_{143}^{\text{tSZ}}$	7.10	$5.0 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4561	$0.4553 \pm 0.0069$	$H(0.57)$	95.878	$95.87 \pm 0.30$
$A_{100}^{\text{PS}}$	262.4	$268 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6176	$0.6165 \pm 0.0068$	$D_A(0.57)$	1339.2	$1339.4 \pm 8.4$
$A_{143}^{\text{PS}}$	42.2	$46 \pm 8$	$\sigma_8/h^{0.5}$	0.9967	$0.995 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67241	$0.6724 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	34.1	$39_{-10}^{+9}$	$\langle d^2 \rangle^{1/2}$	2.4410	$2.436 \pm 0.024$	$f\sigma_8(0.57)$	0.4824	$0.4814 \pm 0.0050$
$A_{217}^{\text{PS}}$	95.7	$95 \pm 10$	$z_{\text{re}}$	9.61	$9.3_{-1.2}^{+1.4}$	$\sigma_8(0.57)$	0.6258	$0.6245 \pm 0.0076$
$A^{\text{kSZ}}$	0.52	$< 5.61$	$10^9 A_s$	2.199	$2.191 \pm 0.055$	$r_{0.002}$	0.0064	$< 0.0704$
$A_{100}^{\text{dustTT}}$	7.61	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8980	$1.900 \pm 0.012$	$r_{0.01}$	0.0066	$< 0.0713$
$A_{143}^{\text{dustTT}}$	9.25	$9.2 \pm 1.8$	$D_{40}$	1211.7	$1231_{-20}^{+15}$	$\ln(10^{10} A_t)$	-1.91	$-0.18_{-0.56}^{+1.3}$
$A_{143 \times 217}^{\text{dustTT}}$	18.63	$17.5 \pm 4.1$	$D_{220}$	5714.4	$5720 \pm 39$	$r_{10}$	0.0032	$< 0.0356$
$A_{217}^{\text{dustTT}}$	82.9	$81.6 \pm 7.4$	$D_{810}$	2535.0	$2538 \pm 13$	$10^9 A_t$	0.015	$< 0.158$
$A_{100}^{\text{dustEE}}$	0.0823	$0.0816 \pm 0.0057$	$D_{1420}$	812.36	$813.3 \pm 4.7$	$10^9 A_t e^{-2\tau}$	0.013	$< 0.138$
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.0492 \pm 0.0050$	$D_{2000}$	228.22	$228.4 \pm 1.6$	$f_{2000}^{143}$	31.85	$32.2 \pm 2.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.0970	$0.099 \pm 0.033$	$n_{s,0.002}$	0.98202	$0.9821 \pm 0.0049$	$f_{2000}^{143 \times 217}$	34.26	$34.4 \pm 1.9$
$A_{143}^{\text{dustEE}}$	0.1013	$0.1005 \pm 0.0068$	$Y_P$	0.250658	$0.250651 \pm 0.000070$	$f_{2000}^{217}$	107.48	$107.6 \pm 1.9$
$A_{143 \times 217}^{\text{dustEE}}$	0.2201	$0.221 \pm 0.047$	$Y_P^{\text{BBN}}$	0.252003	$0.251996 \pm 0.000070$	$\chi_{\text{lensing}}^2$	10.46	$10.7 \pm 1.9$
$A_{217}^{\text{dustEE}}$	0.636	$0.65 \pm 0.13$	$10^5 D/H$	2.6763	$2.680 \pm 0.030$	$\chi_{\text{lowTEB}}^2$	10493.83	$10495.9 \pm 1.9$
$A_{100}^{\text{dustTE}}$	0.1416	$0.143 \pm 0.038$	Age/Gyr	13.4151	$13.417 \pm 0.025$	$\chi_{\text{plik}}^2$	2441.3	$2459.9 \pm 6.9$
$A_{100 \times 143}^{\text{dustTE}}$	0.1322	$0.133 \pm 0.029$	$z_*$	1090.338	$1090.36 \pm 0.30$	$\chi_{\text{prior}}^2$	8.1	$20 \pm 6$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.301 \pm 0.084$	$r_*$	141.306	$141.32 \pm 0.30$	$\chi_{\text{CMB}}^2$	12945.6	$12966.6 \pm 6.9$
$A_{143}^{\text{dustTE}}$	0.154	$0.156 \pm 0.054$	$100\theta_*$	1.040259	$1.04026 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12953.69$ ;  $\bar{\chi}_{\text{eff}}^2 = 12986.64$ ;  $R - 1 = 0.01320$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.46 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.83 plik\_dx11dr2\_HM\_v18\_TTTEE: 2441.31

## 15.7 base\_nnu\_r\_plikHM\_TT\_lowTEB\_nnup57\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022795	$0.02278 \pm 0.00024$	$\Omega_m h^3$	0.10737	$0.10731 \pm 0.00051$	$100\theta_D$	0.162085	$0.16210 \pm 0.00027$
$\Omega_c h^2$	0.12442	$0.1243 \pm 0.0021$	$\sigma_8$	0.8465	$0.845 \pm 0.010$	$z_{\text{eq}}$	3267.9	$3266 \pm 45$
$100\theta_{\text{MC}}$	1.040528	$1.04050 \pm 0.00045$	$\sigma_8 \Omega_m^{0.5}$	0.4483	$0.4473 \pm 0.0088$	$k_{\text{eq}}$	0.010349	$0.01034 \pm 0.00014$
$\tau$	0.0879	$0.084 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6160	$0.6147 \pm 0.0078$	$100\theta_{\text{eq}}$	0.8395	$0.8400 \pm 0.0091$
$\ln(10^{10} A_s)$	3.1179	$3.115 \pm 0.031$	$\sigma_8/h^{0.5}$	0.9934	$0.991 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.46271	$0.4630 \pm 0.0046$
$n_s$	0.9933	$0.9941 \pm 0.0063$	$\langle d^2 \rangle^{1/2}$	2.4235	$2.417 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.07333	$0.07336 \pm 0.00074$
$r$	0.0040	$< 0.0808$	$z_{\text{re}}$	10.89	$10.5^{+1.6}_{-1.4}$	$H(0.57)$	97.565	$97.57 \pm 0.47$
$y_{\text{cal}}$	0.99852	$1.0005 \pm 0.0025$	$10^9 A_s$	2.260	$2.253 \pm 0.069$	$D_A(0.57)$	1307.3	$1307 \pm 12$
$A_{217}^{\text{CIB}}$	69.1	$66.5 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8955	$1.902 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.66795	$0.6679 \pm 0.0030$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.003	$< 0.610$	$D_{40}$	1195.4	$1219^{+16}_{-23}$	$f\sigma_8(0.57)$	0.4831	$0.4821 \pm 0.0056$
$A_{143}^{\text{tSZ}}$	6.11	$4.6 \pm 2.0$	$D_{220}$	5704.4	$5722 \pm 41$	$\sigma_8(0.57)$	0.6379	$0.6368 \pm 0.0091$
$A_{100}^{\text{PS}}$	265.1	$269 \pm 28$	$D_{810}$	2529.7	$2539 \pm 14$	$r_{0.002}$	0.0040	$< 0.0819$
$A_{143}^{\text{PS}}$	44.4	$48 \pm 8$	$D_{1420}$	810.0	$813.4 \pm 5.1$	$r_{0.01}$	0.0040	$< 0.0814$
$A_{143 \times 217}^{\text{PS}}$	33.7	$40^{+9}_{-10}$	$D_{2000}$	227.05	$228.0 \pm 1.8$	$\ln(10^{10} A_t)$	-2.39	$-0.07^{+1.4}_{-0.57}$
$A_{217}^{\text{PS}}$	95.4	$96 \pm 10$	$n_{s,0.002}$	0.9933	$0.9941 \pm 0.0063$	$r_{10}$	0.0020	$< 0.0409$
$A^{\text{kSZ}}$	1.91	$4.6^{+2.2}_{-3.9}$	$Y_{\text{P}}$	0.253007	$0.25300 \pm 0.00011$	$10^9 A_t$	0.009	$< 0.182$
$A_{100}^{\text{dustTT}}$	7.60	$7.6 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.254361	$0.25436 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	0.008	$< 0.154$
$A_{143}^{\text{dustTT}}$	9.32	$9.1 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.7050	$2.708 \pm 0.046$	$f_{2000}^{143}$	33.25	$33.3 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.69	$17.4 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.2228	$13.224 \pm 0.038$	$f_{2000}^{143 \times 217}$	35.12	$35.1 \pm 2.1$
$A_{217}^{\text{dustTT}}$	81.3	$81.7 \pm 7.4$	$z_*$	1090.315	$1090.33 \pm 0.43$	$f_{2000}^{217}$	108.16	$108.4 \pm 2.0$
$c_{100}$	0.99787	$0.99788 \pm 0.00078$	$r_*$	140.293	$140.32 \pm 0.43$	$\chi_{\text{lensing}}^2$	9.48	$10.0 \pm 1.4$
$c_{217}$	0.99621	$0.9962 \pm 0.0014$	$100\theta_*$	1.040315	$1.04029 \pm 0.00044$	$\chi_{\text{lowTEB}}^2$	10493.64	$10495.7 \pm 2.3$
$H_0$	72.62	$72.64 \pm 0.99$	$D_A/\text{Gpc}$	13.4856	$13.489 \pm 0.040$	$\chi_{\text{plik}}^2$	770.2	$783.1 \pm 5.6$
$\Omega_\Lambda$	0.7196	$0.720 \pm 0.011$	$z_{\text{drag}}$	1061.687	$1061.64 \pm 0.47$	$\chi_{\text{prior}}^2$	2.78	$7.6 \pm 3.7$
$\Omega_m$	0.2804	$0.280 \pm 0.011$	$r_{\text{drag}}$	142.766	$142.80 \pm 0.43$	$\chi_{\text{CMB}}^2$	11273.3	$11288.8 \pm 5.8$
$\Omega_m h^2$	0.14786	$0.1478 \pm 0.0020$	$k_D$	0.143726	$0.14368 \pm 0.00049$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 11296.42$ ;  $R - 1 = 0.00818$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.48 lowl\_SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10493.64 plik\_dx11dr2\_HM\_v18.TT: 770.22

## 15.8 base\_nnu\_r\_plikHM\_TTTEE\_lowTEB\_nnup57\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022758	$0.02277 \pm 0.00016$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.336 \pm 0.080$	$D_A/\text{Gpc}$	13.4401	$13.446 \pm 0.028$
$\Omega_c h^2$	0.12677	$0.1265 \pm 0.0015$	$A_{217}^{\text{dustTE}}$	1.659	$1.66 \pm 0.25$	$z_{\text{drag}}$	1061.764	$1061.77 \pm 0.31$
$100\theta_{\text{MC}}$	1.040107	$1.04013 \pm 0.00031$	$c_{100}$	0.99806	$0.99805 \pm 0.00078$	$r_{\text{drag}}$	142.236	$142.30 \pm 0.29$
$\tau$	0.0731	$0.075 \pm 0.014$	$c_{217}$	0.99625	$0.9963 \pm 0.0014$	$k_D$	0.144292	$0.14424 \pm 0.00032$
$\ln(10^{10} A_s)$	3.0960	$3.099 \pm 0.026$	$H_0$	71.60	$71.74 \pm 0.69$	$100\theta_D$	0.161996	$0.16199 \pm 0.00018$
$n_s$	0.98807	$0.9893 \pm 0.0049$	$\Omega_\Lambda$	0.7071	$0.7086 \pm 0.0083$	$z_{\text{eq}}$	3319.2	$3313 \pm 32$
$r$	0.0229	$< 0.0787$	$\Omega_m$	0.2929	$0.2914 \pm 0.0083$	$k_{\text{eq}}$	0.010511	$0.01049 \pm 0.00010$
$y_{\text{cal}}$	0.99979	$1.0002 \pm 0.0025$	$\Omega_m h^2$	0.15017	$0.1499 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8293	$0.8307 \pm 0.0063$
$A_{217}^{\text{CIB}}$	69.8	$67.3 \pm 6.6$	$\Omega_m h^3$	0.107525	$0.10751 \pm 0.00033$	$100\theta_{s,\text{eq}}$	0.45744	$0.4581 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.007	$< 0.593$	$\sigma_8$	0.8433	$0.8441 \pm 0.0092$	$r_{\text{drag}}/D_V(0.57)$	0.07252	$0.07262 \pm 0.00051$
$A_{143}^{\text{tSZ}}$	6.44	$4.8 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4564	$0.4556 \pm 0.0069$	$H(0.57)$	97.155	$97.21 \pm 0.32$
$A_{100}^{\text{PS}}$	267.6	$271 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.6201 \pm 0.0069$	$D_A(0.57)$	1319.3	$1317.7 \pm 8.4$
$A_{143}^{\text{PS}}$	43.5	$48 \pm 8$	$\sigma_8/h^{0.5}$	0.9966	$0.997 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67125	$0.6708 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	33.5	$39_{-10}^{+9}$	$\langle d^2 \rangle^{1/2}$	2.4305	$2.429 \pm 0.024$	$f\sigma_8(0.57)$	0.4851	$0.4850 \pm 0.0051$
$A_{217}^{\text{PS}}$	94.5	$95 \pm 10$	$z_{\text{re}}$	9.61	$9.7_{-1.2}^{+1.4}$	$\sigma_8(0.57)$	0.6321	$0.6331 \pm 0.0078$
$A^{\text{kSZ}}$	2.01	$4.7_{-3.8}^{+2.3}$	$10^9 A_s$	2.211	$2.219 \pm 0.057$	$r_{0.002}$	0.0223	$< 0.0783$
$A_{100}^{\text{dustTT}}$	7.71	$7.7 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.9100	$1.910 \pm 0.012$	$r_{0.01}$	0.0226	$< 0.0785$
$A_{143}^{\text{dustTT}}$	9.35	$9.3 \pm 1.8$	$D_{40}$	1210.6	$1224_{-22}^{+15}$	$\ln(10^{10} A_t)$	-0.68	$-0.06_{-0.55}^{+1.3}$
$A_{143 \times 217}^{\text{dustTT}}$	17.89	$17.6 \pm 4.2$	$D_{220}$	5717.8	$5720 \pm 38$	$r_{10}$	0.0112	$< 0.0396$
$A_{217}^{\text{dustTT}}$	81.5	$81.6 \pm 7.4$	$D_{810}$	2538.7	$2540 \pm 13$	$10^9 A_t$	0.051	$< 0.174$
$A_{100}^{\text{dustEE}}$	0.0823	$0.0819 \pm 0.0057$	$D_{1420}$	811.88	$812.7 \pm 4.7$	$10^9 A_t e^{-2\tau}$	0.044	$< 0.150$
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.0496 \pm 0.0050$	$D_{2000}$	227.41	$227.7 \pm 1.6$	$f_{2000}^{143}$	33.23	$33.2 \pm 2.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.1006	$0.099 \pm 0.032$	$n_{s,0.002}$	0.98807	$0.9893 \pm 0.0049$	$f_{2000}^{143 \times 217}$	35.27	$35.1 \pm 1.9$
$A_{143}^{\text{dustEE}}$	0.1013	$0.1009 \pm 0.0069$	$Y_P$	0.252991	$0.252998 \pm 0.000071$	$f_{2000}^{217}$	108.40	$108.3 \pm 1.9$
$A_{143 \times 217}^{\text{dustEE}}$	0.2197	$0.219 \pm 0.046$	$Y_P^{\text{BBN}}$	0.254345	$0.254352 \pm 0.000072$	$\chi_{\text{lensing}}^2$	10.43	$11.0 \pm 1.9$
$A_{217}^{\text{dustEE}}$	0.637	$0.64 \pm 0.13$	$10^5 D/H$	2.7120	$2.709 \pm 0.031$	$\chi_{\text{lowTEB}}^2$	10493.60	$10495.4 \pm 2.0$
$A_{100}^{\text{dustTE}}$	0.1425	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.2487	$13.245 \pm 0.026$	$\chi_{\text{plik}}^2$	2446.4	$2464.5 \pm 7.0$
$A_{100 \times 143}^{\text{dustTE}}$	0.1315	$0.133 \pm 0.029$	$z_*$	1090.561	$1090.52 \pm 0.30$	$\chi_{\text{prior}}^2$	8.3	$20 \pm 6$
$A_{100 \times 217}^{\text{dustTE}}$	0.300	$0.302 \pm 0.084$	$r_*$	139.763	$139.82 \pm 0.30$	$\chi_{\text{CMB}}^2$	12950.5	$12970.9 \pm 7.0$
$A_{143}^{\text{dustTE}}$	0.154	$0.156 \pm 0.054$	$100\theta_*$	1.039894	$1.03992 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12958.73$ ;  $\bar{\chi}_{\text{eff}}^2 = 12991.26$ ;  $R - 1 = 0.01465$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 10.43 lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.60 plik\_dx11dr2\_HM\_v18\_TTTEE: 2446.42

## 16 nnu+yhe

### 16.1 base\_nnu\_yhe\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022261	$0.02231 \pm 0.00037$	$\Omega_\Lambda$	0.6831	$0.688^{+0.024}_{-0.021}$	$D_A/\text{Gpc}$	13.993	$13.88 \pm 0.42$
$\Omega_c h^2$	0.1178	$0.1200^{+0.0068}_{-0.0084}$	$\Omega_m$	0.3169	$0.312^{+0.021}_{-0.024}$	$z_{\text{drag}}$	1059.82	$1060.0 \pm 1.3$
$100\theta_{\text{MC}}$	1.04150	$1.0411 \pm 0.0019$	$\Omega_m h^2$	0.1407	$0.1429^{+0.0069}_{-0.0084}$	$r_{\text{drag}}$	148.46	$147.2 \pm 4.7$
$\tau$	0.0787	$0.081 \pm 0.022$	$\Omega_m h^3$	0.0938	$0.0971^{+0.0088}_{-0.011}$	$k_D$	0.13937	$0.1406^{+0.0040}_{-0.0046}$
$N_{\text{eff}}$	2.91	$3.09^{+0.50}_{-0.60}$	$\sigma_8$	0.8275	$0.833 \pm 0.024$	$100\theta_D$	0.16108	$0.16120 \pm 0.00079$
$Y_P$	0.2560	$0.250^{+0.034}_{-0.029}$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.465 \pm 0.013$	$z_{\text{eq}}$	3409	$3387 \pm 89$
$\ln(10^{10} A_s)$	3.0893	$3.097 \pm 0.047$	$\sigma_8 \Omega_m^{0.25}$	0.6209	$0.622 \pm 0.014$	$k_{\text{eq}}$	0.010310	$0.01035^{+0.00021}_{-0.00024}$
$n_s$	0.9656	$0.969 \pm 0.016$	$\sigma_8/h^{0.5}$	1.0137	$1.013 \pm 0.020$	$100\theta_{\text{eq}}$	0.8121	$0.816 \pm 0.016$
$y_{\text{cal}}$	1.00027	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5009	$2.497 \pm 0.049$	$100\theta_{\text{s,eq}}$	0.4488	$0.4510 \pm 0.0083$
$A_{217}^{\text{CIB}}$	67.4	$64.3 \pm 6.8$	$z_{\text{re}}$	10.06	$10.2^{+2.1}_{-1.9}$	$r_{\text{drag}}/D_V(0.57)$	0.07131	$0.0716 \pm 0.0012$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.196	$2.215^{+0.099}_{-0.11}$	$H(0.57)$	92.09	$93.2^{+3.5}_{-3.9}$
$A_{143}^{\text{tSZ}}$	7.09	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8762	$1.882^{+0.028}_{-0.025}$	$D_A(0.57)$	1405	$1387 \pm 63$
$A_{100}^{\text{PS}}$	255.1	$260 \pm 29$	$D_{40}$	1234.3	$1233 \pm 23$	$F_{\text{AP}}(0.57)$	0.6774	$0.6762 \pm 0.0056$
$A_{143}^{\text{PS}}$	39.9	$45 \pm 9$	$D_{220}$	5715.5	$5718 \pm 42$	$f\sigma_8(0.57)$	0.4825	$0.484 \pm 0.011$
$A_{143 \times 217}^{\text{PS}}$	33.1	$39^{+10}_{-10}$	$D_{810}$	2534.1	$2535 \pm 14$	$\sigma_8(0.57)$	0.6143	$0.620 \pm 0.022$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{1420}$	814.3	$814.0 \pm 5.3$	$f_{2000}^{143}$	30.19	$31 \pm 4$
$A^{\text{kSZ}}$	0.02	$< 4.93$	$D_{2000}$	230.10	$229.9 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.74	$33.0 \pm 2.8$
$A_{100}^{\text{dustTT}}$	7.41	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9656	$0.969 \pm 0.016$	$f_{2000}^{217}$	106.41	$106.5 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.06	$9.0 \pm 1.8$	$Y_P$	0.2560	$0.250^{+0.034}_{-0.029}$	$\chi_{\text{lowTEB}}^2$	10496.38	$10497.4 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.68	$17.1 \pm 4.2$	$Y_P^{\text{BBN}}$	0.2574	$0.252^{+0.034}_{-0.029}$	$\chi_{\text{plik}}^2$	763.4	$779.1 \pm 6.2$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.4$	Age/Gyr	13.93	$13.79 \pm 0.50$	$\chi_{\text{prior}}^2$	2.05	$7.4 \pm 3.6$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$z_*$	1090.24	$1090.23 \pm 0.70$	$\chi_{\text{CMB}}^2$	11259.8	$11276.5 \pm 5.9$
$c_{217}$	0.99601	$0.9960 \pm 0.0015$	$r_*$	145.73	$144.5 \pm 4.6$			
$H_0$	66.64	$67.8 \pm 3.6$	$100\theta_*$	1.04144	$1.0411 \pm 0.0014$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.85$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.07$ ;  $R - 1 = 0.00751$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.38 ( $\Delta$  -0.09) plik\_dx11dr2\_HM\_v18\_TT: 763.42 ( $\Delta$  0.05)

## 16.2 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022344	$0.02234 \pm 0.00026$	$\Omega_m$	0.3091	$0.3086 \pm 0.0090$	$r_{\text{drag}}$	147.40	$146.8 \pm 3.9$
$\Omega_c h^2$	0.1189	$0.1203^{+0.0066}_{-0.0077}$	$\Omega_m h^2$	0.1419	$0.1433^{+0.0066}_{-0.0077}$	$k_D$	0.14024	$0.1409^{+0.0036}_{-0.0040}$
$100\theta_{\text{MC}}$	1.04118	$1.0410 \pm 0.0018$	$\Omega_m h^3$	0.0962	$0.0978^{+0.0071}_{-0.0086}$	$100\theta_D$	0.16116	$0.16123 \pm 0.00074$
$\tau$	0.0827	$0.082 \pm 0.018$	$\sigma_8$	0.8322	$0.834^{+0.019}_{-0.022}$	$z_{\text{eq}}$	3377.3	$3374 \pm 44$
$N_{\text{eff}}$	3.043	$3.13^{+0.41}_{-0.48}$	$\sigma_8 \Omega_m^{0.5}$	0.4627	$0.463 \pm 0.011$	$k_{\text{eq}}$	0.010306	$0.01035^{+0.00021}_{-0.00024}$
$Y_P$	0.2525	$0.249^{+0.033}_{-0.029}$	$\sigma_8 \Omega_m^{0.25}$	0.6205	$0.622 \pm 0.014$	$100\theta_{\text{eq}}$	0.8179	$0.8186 \pm 0.0074$
$\ln(10^{10} A_s)$	3.0991	$3.100 \pm 0.038$	$\sigma_8/h^{0.5}$	1.0110	$1.011 \pm 0.019$	$100\theta_{s,\text{eq}}$	0.45181	$0.4521 \pm 0.0038$
$n_s$	0.9705	$0.9709 \pm 0.0090$	$\langle d^2 \rangle^{1/2}$	2.4907	$2.491 \pm 0.043$	$r_{\text{drag}}/D_V(0.57)$	0.071712	$0.07174 \pm 0.00047$
$y_{\text{cal}}$	1.00028	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.40	$10.3^{+1.8}_{-1.6}$	$H(0.57)$	93.09	$93.6 \pm 2.6$
$A_{217}^{\text{CIB}}$	67.3	$64.3 \pm 6.8$	$10^9 A_s$	2.218	$2.222 \pm 0.084$	$D_A(0.57)$	1385.4	$1379 \pm 41$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8798	$1.884 \pm 0.024$	$F_{\text{AP}}(0.57)$	0.67541	$0.6753 \pm 0.0023$
$A_{143}^{\text{tSZ}}$	7.12	$5.0 \pm 2.0$	$D_{40}$	1228.4	$1230 \pm 17$	$f\sigma_8(0.57)$	0.4832	$0.484 \pm 0.011$
$A_{100}^{\text{PS}}$	254.4	$260 \pm 29$	$D_{220}$	5716.4	$5719 \pm 41$	$\sigma_8(0.57)$	0.6197	$0.622^{+0.015}_{-0.017}$
$A_{143}^{\text{PS}}$	39.6	$45 \pm 9$	$D_{810}$	2534.6	$2535 \pm 14$	$f_{2000}^{143}$	29.99	$31 \pm 4$
$A_{143 \times 217}^{\text{PS}}$	33.1	$39^{+10}_{-10}$	$D_{1420}$	814.5	$814.1 \pm 5.3$	$f_{2000}^{143 \times 217}$	32.64	$33.0 \pm 2.8$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{2000}$	230.08	$229.8 \pm 2.4$	$f_{2000}^{217}$	106.30	$106.6 \pm 2.7$
$A^{\text{kSZ}}$	0.00	$< 4.99$	$n_{s,0.002}$	0.9705	$0.9709 \pm 0.0090$	$\chi_{\text{lowTEB}}^2$	10495.99	$10496.9 \pm 2.5$
$A_{100}^{\text{dustTT}}$	7.52	$7.4 \pm 1.9$	$Y_P$	0.2525	$0.249^{+0.033}_{-0.029}$	$\chi_{\text{plik}}^2$	763.9	$778.9 \pm 6.0$
$A_{143}^{\text{dustTT}}$	9.03	$9.0 \pm 1.8$	$Y_P^{\text{BBN}}$	0.2538	$0.251^{+0.033}_{-0.029}$	$\chi_{6\text{DF}}^2$	0.0154	$0.063 \pm 0.087$
$A_{143 \times 217}^{\text{dustTT}}$	17.69	$17.2 \pm 4.2$	Age/Gyr	13.791	$13.73 \pm 0.37$	$\chi_{\text{MGS}}^2$	1.34	$1.47 \pm 0.63$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.5$	$z_*$	1090.14	$1090.19 \pm 0.67$	$\chi_{\text{DR11CMass}}^2$	2.424	$2.97 \pm 0.79$
$c_{100}$	0.99792	$0.99788 \pm 0.00077$	$r_*$	144.72	$144.1 \pm 3.8$	$\chi_{\text{DR11LOWZ}}^2$	0.543	$0.68 \pm 0.63$
$c_{217}$	0.99597	$0.9960 \pm 0.0015$	$100\theta_*$	1.04119	$1.0411 \pm 0.0013$	$\chi_{\text{prior}}^2$	2.05	$7.4 \pm 3.6$
$H_0$	67.76	$68.1 \pm 2.2$	$D_A/\text{Gpc}$	13.900	$13.84 \pm 0.35$	$\chi_{\text{CMB}}^2$	11259.9	$11275.8 \pm 5.7$
$\Omega_\Lambda$	0.6909	$0.6914 \pm 0.0090$	$z_{\text{drag}}$	1060.05	$1060.1 \pm 1.1$	$\chi_{\text{BAO}}^2$	4.33	$5.2 \pm 1.2$

Best-fit  $\chi_{\text{eff}}^2 = 11266.29$ ;  $\Delta\chi_{\text{eff}}^2 = -0.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.97$ ;  $R - 1 = 0.00475$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.07) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.99 ( $\Delta$  -0.43) plik\_dx11dr2\_HM\_v18\_TT: 763.93 ( $\Delta$  0.33)

### 16.3 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022403	$0.02241 \pm 0.00033$	$\Omega_\Lambda$	0.6955	$0.696^{+0.017}_{-0.016}$	$D_A/\text{Gpc}$	13.746	$13.72 \pm 0.31$
$\Omega_c h^2$	0.1216	$0.1223^{+0.0060}_{-0.0069}$	$\Omega_m$	0.3045	$0.304 \pm 0.016$	$z_{\text{drag}}$	1060.12	$1060.2 \pm 1.3$
$100\theta_{\text{MC}}$	1.04060	$1.0406 \pm 0.0017$	$\Omega_m h^2$	0.1447	$0.1454^{+0.0059}_{-0.0069}$	$r_{\text{drag}}$	145.70	$145.4 \pm 3.4$
$\tau$	0.0858	$0.085 \pm 0.021$	$\Omega_m h^3$	0.0997	$0.1008^{+0.0069}_{-0.0079}$	$k_D$	0.14182	$0.1421 \pm 0.0033$
$N_{\text{eff}}$	3.238	$3.29 \pm 0.40$	$\sigma_8$	0.8401	$0.841 \pm 0.021$	$100\theta_D$	0.16115	$0.16128 \pm 0.00078$
$Y_P$	0.2436	$0.244 \pm 0.029$	$\sigma_8 \Omega_m^{0.5}$	0.4636	$0.463 \pm 0.013$	$z_{\text{eq}}$	3355	$3351 \pm 63$
$\ln(10^{10} A_s)$	3.1097	$3.109 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.624 \pm 0.014$	$k_{\text{eq}}$	0.010372	$0.01039 \pm 0.00021$
$n_s$	0.9735	$0.975 \pm 0.013$	$\sigma_8/h^{0.5}$	1.0119	$1.011 \pm 0.020$	$100\theta_{\text{eq}}$	0.8217	$0.823 \pm 0.012$
$y_{\text{cal}}$	1.00037	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4917	$2.488 \pm 0.046$	$100\theta_{s,\text{eq}}$	0.4538	$0.4543 \pm 0.0060$
$A_{217}^{\text{CIB}}$	66.7	$64.4 \pm 6.8$	$z_{\text{re}}$	10.68	$10.5^{+2.0}_{-1.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.07201 \pm 0.00090$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$10^9 A_s$	2.241	$2.242^{+0.091}_{-0.11}$	$H(0.57)$	94.36	$94.7 \pm 2.5$
$A_{143}^{\text{tSZ}}$	7.03	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8881	$1.890 \pm 0.022$	$D_A(0.57)$	1364.4	$1360 \pm 42$
$A_{100}^{\text{PS}}$	254.1	$261 \pm 29$	$D_{40}$	1228.0	$1228 \pm 21$	$F_{\text{AP}}(0.57)$	0.67426	$0.6740 \pm 0.0042$
$A_{143}^{\text{PS}}$	40.5	$45 \pm 9$	$D_{220}$	5719.8	$5721 \pm 41$	$f\sigma_8(0.57)$	0.4866	$0.486 \pm 0.011$
$A_{143 \times 217}^{\text{PS}}$	34.9	$39^{+10}_{-10}$	$D_{810}$	2536.3	$2536 \pm 14$	$\sigma_8(0.57)$	0.6267	$0.627 \pm 0.018$
$A_{217}^{\text{PS}}$	98.4	$97 \pm 10$	$D_{1420}$	815.0	$814.2 \pm 5.3$	$f_{2000}^{143}$	29.81	$31 \pm 4$
$A^{\text{kSZ}}$	0.00	$< 5.02$	$D_{2000}$	230.26	$229.8 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.48	$33.0 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.43	$7.4 \pm 1.9$	$n_{s,0.002}$	0.9735	$0.975 \pm 0.013$	$f_{2000}^{217}$	106.08	$106.5 \pm 2.7$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	$Y_P$	0.2436	$0.244 \pm 0.029$	$\chi_{\text{lowTEB}}^2$	10496.11	$10497.0 \pm 2.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.2449	$0.245 \pm 0.029$	$\chi_{\text{plik}}^2$	764.2	$779.4 \pm 6.1$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.4$	$\text{Age}/\text{Gyr}$	13.615	$13.58 \pm 0.34$	$\chi_{\text{H070p6}}^2$	0.254	$0.72 \pm 0.98$
$c_{100}$	0.99793	$0.99789 \pm 0.00077$	$z_*$	1090.03	$1090.13 \pm 0.68$	$\chi_{\text{prior}}^2$	1.95	$7.4 \pm 3.6$
$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$r_*$	143.07	$142.8 \pm 3.4$	$\chi_{\text{CMB}}^2$	11260.3	$11276.3 \pm 5.8$
$H_0$	68.92	$69.2 \pm 2.5$	$100\theta_*$	1.04077	$1.0407 \pm 0.0011$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.50$ ;  $\Delta\chi_{\text{eff}}^2 = -0.32$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.44$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.74$ ;  $R - 1 = 0.00516$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10496.11 ( $\Delta$  -0.21) plik\_dx11dr2\_HM\_v18\_TT: 764.18 ( $\Delta$  0.52) Hubble - H070p6: 0.25 ( $\Delta$  -0.57)

## 16.4 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022362	$0.02237 \pm 0.00025$	$\Omega_m h^2$	0.1446	$0.1454^{+0.0060}_{-0.0068}$	$100\theta_D$	0.16110	$0.16123 \pm 0.00074$
$\Omega_c h^2$	0.1216	$0.1224^{+0.0060}_{-0.0068}$	$\Omega_m h^3$	0.0994	$0.1003^{+0.0063}_{-0.0075}$	$z_{\text{eq}}$	3359.1	$3359 \pm 38$
$100\theta_{\text{MC}}$	1.04051	$1.0405 \pm 0.0016$	$\sigma_8$	0.8385	$0.839 \pm 0.019$	$k_{\text{eq}}$	0.010377	$0.01040 \pm 0.00020$
$\tau$	0.0842	$0.083 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.464 \pm 0.011$	$100\theta_{\text{eq}}$	0.8209	$0.8210 \pm 0.0064$
$N_{\text{eff}}$	3.228	$3.27^{+0.36}_{-0.41}$	$\sigma_8 \Omega_m^{0.25}$	0.6236	$0.624 \pm 0.014$	$100\theta_{\text{s,eq}}$	0.45334	$0.4534 \pm 0.0033$
$Y_{\text{P}}$	0.2422	$0.243^{+0.031}_{-0.028}$	$\sigma_8/h^{0.5}$	1.0113	$1.011 \pm 0.019$	$r_{\text{drag}}/D_V(0.57)$	0.071849	$0.07187 \pm 0.00044$
$\ln(10^{10} A_{\text{s}})$	3.1060	$3.104 \pm 0.037$	$\langle d^2 \rangle^{1/2}$	2.4925	$2.489 \pm 0.043$	$H(0.57)$	94.23	$94.5 \pm 2.2$
$n_{\text{s}}$	0.9719	$0.9728 \pm 0.0087$	$z_{\text{re}}$	10.54	$10.4^{+1.8}_{-1.6}$	$D_{\text{A}}(0.57)$	1367.1	$1364 \pm 34$
$y_{\text{cal}}$	1.00026	$1.0004 \pm 0.0025$	$10^9 A_{\text{s}}$	2.233	$2.231^{+0.080}_{-0.090}$	$F_{\text{AP}}(0.57)$	0.67464	$0.6746 \pm 0.0021$
$A_{217}^{\text{CIB}}$	67.4	$64.3 \pm 6.8$	$10^9 A_{\text{s}} e^{-2\tau}$	1.8869	$1.890 \pm 0.022$	$f\sigma_8(0.57)$	0.4860	$0.486 \pm 0.011$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1229.8	$1230 \pm 17$	$\sigma_8(0.57)$	0.6251	$0.626^{+0.015}_{-0.016}$
$A_{143}^{\text{tSZ}}$	7.20	$5.0 \pm 2.0$	$D_{220}$	5718.2	$5720 \pm 41$	$f_{2000}^{143}$	29.88	$31 \pm 4$
$A_{100}^{\text{PS}}$	252.6	$260 \pm 29$	$D_{810}$	2534.9	$2536 \pm 14$	$f_{2000}^{143 \times 217}$	32.43	$32.9 \pm 2.9$
$A_{143}^{\text{PS}}$	39.1	$45 \pm 9$	$D_{1420}$	814.5	$814.1 \pm 5.3$	$f_{2000}^{217}$	106.03	$106.5 \pm 2.7$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$D_{2000}$	230.15	$229.8 \pm 2.4$	$\chi_{\text{lowTEB}}^2$	10496.20	$10496.8 \pm 2.5$
$A_{217}^{\text{PS}}$	97.1	$97 \pm 10$	$n_{\text{s},0.002}$	0.9719	$0.9728 \pm 0.0087$	$\chi_{\text{plik}}^2$	763.9	$779.0 \pm 6.0$
$A^{\text{kSZ}}$	0.00	$< 5.02$	$Y_{\text{P}}$	0.2422	$0.243^{+0.031}_{-0.028}$	$\chi_{\text{H070p6}}^2$	0.310	$0.55 \pm 0.68$
$A_{100}^{\text{dustTT}}$	7.54	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.2435	$0.244^{+0.031}_{-0.028}$	$\chi_{\text{JLA}}^2$	706.614	$706.66 \pm 0.18$
$A_{143}^{\text{dustTT}}$	8.99	$9.0 \pm 1.8$	Age/Gyr	13.631	$13.60 \pm 0.31$	$\chi_{6\text{DF}}^2$	0.0029	$0.046 \pm 0.064$
$A_{143 \times 217}^{\text{dustTT}}$	17.54	$17.2 \pm 4.2$	$z_*$	1090.02	$1090.13 \pm 0.67$	$\chi_{\text{MGS}}^2$	1.54	$1.64 \pm 0.61$
$A_{217}^{\text{dustTT}}$	81.8	$81.8 \pm 7.5$	$r_*$	143.14	$142.9 \pm 3.3$	$\chi_{\text{DR11CMass}}^2$	2.431	$2.91 \pm 0.69$
$c_{100}$	0.99791	$0.99789 \pm 0.00077$	$100\theta_*$	1.04074	$1.0407 \pm 0.0011$	$\chi_{\text{DR11LOWZ}}^2$	0.376	$0.50 \pm 0.50$
$c_{217}$	0.99588	$0.9960 \pm 0.0015$	$D_{\text{A}}/\text{Gpc}$	13.754	$13.73 \pm 0.30$	$\chi_{\text{prior}}^2$	2.09	$7.4 \pm 3.6$
$H_0$	68.75	$69.0 \pm 1.8$	$z_{\text{drag}}$	1060.01	$1060.1 \pm 1.1$	$\chi_{\text{CMB}}^2$	11260.1	$11275.8 \pm 5.7$
$\Omega_{\Lambda}$	0.6940	$0.6942 \pm 0.0080$	$r_{\text{drag}}$	145.79	$145.5 \pm 3.3$	$\chi_{\text{BAO}}^2$	4.35	$5.1 \pm 1.0$
$\Omega_{\text{m}}$	0.3060	$0.3058 \pm 0.0080$	$k_{\text{D}}$	0.14178	$0.1420 \pm 0.0033$			

Best-fit  $\chi_{\text{eff}}^2 = 11973.47$ ;  $\bar{\chi}_{\text{eff}}^2 = 11995.51$ ;  $R - 1 = 0.00542$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.43 DR11LOWZ: 0.38 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.20 plik\_dx11dr2\_HM\_v18\_TT: 763.91  
Hubble - H070p6: 0.31 SN - JLA December\_2013: 706.61

## 16.5 base\_nnu\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022264	$0.02233 \pm 0.00037$	$\Omega_\Lambda$	0.6917	$0.695 \pm 0.020$	$D_A/\text{Gpc}$	13.949	$13.87 \pm 0.39$
$\Omega_c h^2$	0.1179	$0.1193^{+0.0064}_{-0.0078}$	$\Omega_m$	0.3083	$0.305 \pm 0.020$	$z_{\text{drag}}$	1059.63	$1059.9 \pm 1.3$
$100\theta_{\text{MC}}$	1.04119	$1.0411 \pm 0.0019$	$\Omega_m h^2$	0.1408	$0.1423^{+0.0066}_{-0.0078}$	$r_{\text{drag}}$	147.96	$147.1 \pm 4.4$
$\tau$	0.0666	$0.069^{+0.019}_{-0.021}$	$\Omega_m h^3$	0.0952	$0.0976^{+0.0083}_{-0.010}$	$k_D$	0.13991	$0.1406^{+0.0038}_{-0.0043}$
$N_{\text{eff}}$	3.00	$3.12^{+0.48}_{-0.56}$	$\sigma_8$	0.8146	$0.820 \pm 0.021$	$100\theta_D$	0.16098	$0.16118 \pm 0.00077$
$Y_P$	0.2479	$0.247^{+0.033}_{-0.029}$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4518 \pm 0.0090$	$z_{\text{eq}}$	3370	$3355 \pm 81$
$\ln(10^{10} A_s)$	3.0628	$3.071 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.6084 \pm 0.0099$	$k_{\text{eq}}$	0.010255	$0.01028^{+0.00020}_{-0.00022}$
$n_s$	0.9679	$0.971 \pm 0.015$	$\sigma_8/h^{0.5}$	0.9909	$0.991 \pm 0.012$	$100\theta_{\text{eq}}$	0.8190	$0.822 \pm 0.015$
$y_{\text{cal}}$	1.00009	$1.0002^{+0.0026}_{-0.0024}$	$\langle d^2 \rangle^{1/2}$	2.4489	$2.446 \pm 0.029$	$100\theta_{s,\text{eq}}$	0.4525	$0.4541 \pm 0.0077$
$A_{217}^{\text{CIB}}$	67.6	$64.8 \pm 6.6$	$z_{\text{re}}$	8.89	$9.1 \pm 1.9$	$r_{\text{drag}}/D_V(0.57)$	0.07178	$0.0720^{+0.0010}_{-0.0012}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.139	$2.158^{+0.086}_{-0.10}$	$H(0.57)$	92.80	$93.7^{+3.2}_{-3.7}$
$A_{143}^{\text{tSZ}}$	7.24	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8721	$1.877^{+0.026}_{-0.023}$	$D_A(0.57)$	1389	$1377 \pm 59$
$A_{100}^{\text{PS}}$	254.4	$262 \pm 30$	$D_{40}$	1224.3	$1222 \pm 21$	$F_{\text{AP}}(0.57)$	0.6752	$0.6742 \pm 0.0051$
$A_{143}^{\text{PS}}$	39.0	$45 \pm 9$	$D_{220}$	5714.2	$5717 \pm 42$	$f\sigma_8(0.57)$	0.4728	$0.4743 \pm 0.0086$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{810}$	2532.4	$2533 \pm 14$	$\sigma_8(0.57)$	0.6068	$0.612 \pm 0.020$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$D_{1420}$	815.0	$814.2 \pm 5.2$	$f_{2000}^{143}$	29.93	$31 \pm 4$
$A^{\text{kSZ}}$	0.00	$< 5.30$	$D_{2000}$	230.19	$229.6 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.59	$33.2 \pm 2.8$
$A_{100}^{\text{dustTT}}$	7.52	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9679	$0.971 \pm 0.015$	$f_{2000}^{217}$	106.14	$106.7 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.11	$9.1 \pm 1.8$	$Y_P$	0.2479	$0.247^{+0.033}_{-0.029}$	$\chi^2_{\text{lensing}}$	9.26	$10.1 \pm 1.6$
$A_{143 \times 217}^{\text{dustTT}}$	17.73	$17.3 \pm 4.2$	$Y_P^{\text{BBN}}$	0.2492	$0.249^{+0.033}_{-0.029}$	$\chi^2_{\text{lowTEB}}$	10494.86	$10495.6 \pm 2.0$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.5$	Age/Gyr	13.836	$13.74 \pm 0.47$	$\chi^2_{\text{plik}}$	766.2	$781.2 \pm 5.9$
$c_{100}$	0.99792	$0.99787 \pm 0.00077$	$z_*$	1089.96	$1090.04 \pm 0.68$	$\chi^2_{\text{prior}}$	2.13	$7.5 \pm 3.6$
$c_{217}$	0.99602	$0.9960 \pm 0.0015$	$r_*$	145.25	$144.4 \pm 4.3$	$\chi^2_{\text{CMB}}$	11270.3	$11286.9 \pm 5.9$
$H_0$	67.59	$68.5^{+3.2}_{-3.7}$	$100\theta_*$	1.04134	$1.0412 \pm 0.0013$			

Best-fit  $\chi^2_{\text{eff}} = 11272.41$ ;  $\Delta\chi^2_{\text{eff}} = -0.02$ ;  $\bar{\chi}^2_{\text{eff}} = 11294.42$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.11$ ;  $R - 1 = 0.01240$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.26 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.85 ( $\Delta$  -0.00) plik\_dx11dr2\_HM\_v18\_TT: 766.16 ( $\Delta$  -0.16)



## 16.6 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022192	$0.02221 \pm 0.00024$	$A_{100 \times 143}^{\text{dust}TE}$	0.1313	$0.131 \pm 0.029$	Age/Gyr	14.135	$14.08 \pm 0.30$
$\Omega_c h^2$	0.11469	$0.1155^{+0.0044}_{-0.0051}$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.304 \pm 0.084$	$z_*$	1090.238	$1090.24 \pm 0.45$
$100\theta_{\text{MC}}$	1.04216	$1.0420 \pm 0.0013$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$r_*$	147.72	$147.3 \pm 2.9$
$\tau$	0.0798	$0.080 \pm 0.018$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.338 \pm 0.080$	$100\theta_*$	1.04200	$1.04188 \pm 0.00097$
$N_{\text{eff}}$	2.695	$2.75^{+0.29}_{-0.34}$	$A_{217}^{\text{dust}TE}$	1.664	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	14.176	$14.13 \pm 0.26$
$Y_P$	0.2629	$0.261 \pm 0.018$	$c_{100}$	0.99816	$0.99814 \pm 0.00077$	$z_{\text{drag}}$	1059.59	$1059.66 \pm 0.89$
$\ln(10^{10} A_s)$	3.0860	$3.088 \pm 0.038$	$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	150.50	$150.0 \pm 2.9$
$n_s$	0.9608	$0.9619 \pm 0.0095$	$H_0$	65.36	$65.7 \pm 1.9$	$k_D$	0.13768	$0.1381 \pm 0.0025$
$y_{\text{cal}}$	1.00035	$1.0004 \pm 0.0025$	$\Omega_\Lambda$	0.6780	$0.680 \pm 0.012$	$100\theta_D$	0.160961	$0.16101 \pm 0.00048$
$A_{217}^{\text{CIB}}$	66.8	$64.0 \pm 6.7$	$\Omega_m$	0.3220	$0.320 \pm 0.012$	$z_{\text{eq}}$	3433.1	$3426 \pm 47$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$\Omega_m h^2$	0.13753	$0.1383^{+0.0045}_{-0.0051}$	$k_{\text{eq}}$	0.010228	$0.01024 \pm 0.00015$
$A_{143}^{\text{tSZ}}$	7.17	$5.3 \pm 1.9$	$\Omega_m h^3$	0.0899	$0.0910^{+0.0051}_{-0.0061}$	$100\theta_{\text{eq}}$	0.8080	$0.8094 \pm 0.0085$
$A_{100}^{\text{PS}}$	256.4	$260 \pm 28$	$\sigma_8$	0.8215	$0.823 \pm 0.018$	$100\theta_{s,\text{eq}}$	0.44677	$0.4475 \pm 0.0043$
$A_{143}^{\text{PS}}$	39.9	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4661	$0.4658 \pm 0.0097$	$r_{\text{drag}}/D_V(0.57)$	0.07108	$0.07117 \pm 0.00060$
$A_{143 \times 217}^{\text{PS}}$	35.2	$41 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6188	$0.619 \pm 0.012$	$H(0.57)$	90.67	$91.1^{+2.0}_{-2.2}$
$A_{217}^{\text{PS}}$	98.5	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0162	$1.015 \pm 0.017$	$D_A(0.57)$	1429.3	$1423 \pm 36$
$A^{\text{kSZ}}$	0.00	$< 4.18$	$\langle d^2 \rangle^{1/2}$	2.5135	$2.511 \pm 0.040$	$F_{\text{AP}}(0.57)$	0.67866	$0.6783 \pm 0.0030$
$A_{100}^{\text{dust}TT}$	7.40	$7.5 \pm 1.9$	$z_{\text{re}}$	10.13	$10.1^{+1.8}_{-1.5}$	$f\sigma_8(0.57)$	0.4803	$0.4808 \pm 0.0094$
$A_{143}^{\text{dust}TT}$	8.95	$8.9 \pm 1.8$	$10^9 A_s$	2.189	$2.194 \pm 0.083$	$\sigma_8(0.57)$	0.6086	$0.610 \pm 0.015$
$A_{143 \times 217}^{\text{dust}TT}$	17.45	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8662	$1.869 \pm 0.020$	$f_{2000}^{143}$	29.56	$29.9 \pm 3.0$
$A_{217}^{\text{dust}TT}$	81.8	$81.6 \pm 7.4$	$D_{40}$	1241.0	$1241 \pm 16$	$f_{2000}^{143 \times 217}$	32.44	$32.6 \pm 2.2$
$A_{100}^{\text{dust}EE}$	0.0808	$0.0808 \pm 0.0057$	$D_{220}$	5722.8	$5725 \pm 39$	$f_{2000}^{217}$	106.08	$106.2 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0482	$0.0483 \pm 0.0050$	$D_{810}$	2534.1	$2535 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.29	$10498.0 \pm 2.4$
$A_{100 \times 217}^{\text{dust}EE}$	0.1000	$0.0995 \pm 0.033$	$D_{1420}$	814.82	$814.7 \pm 4.8$	$\chi_{\text{plik}}^2$	2430.2	$2450.9 \pm 7.0$
$A_{143}^{\text{dust}EE}$	0.0998	$0.0997 \pm 0.0069$	$D_{2000}$	230.51	$230.4 \pm 1.8$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.5$
$A_{143 \times 217}^{\text{dust}EE}$	0.2240	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9608	$0.9619 \pm 0.0095$	$\chi_{\text{CMB}}^2$	12927.5	$12949.0 \pm 6.9$
$A_{217}^{\text{dust}EE}$	0.647	$0.65 \pm 0.13$	$Y_P$	0.2629	$0.261 \pm 0.018$			
$A_{100}^{\text{dust}TE}$	0.1393	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2643	$0.263 \pm 0.018$			

Best-fit  $\chi_{\text{eff}}^2 = 12934.29$ ;  $\Delta\chi_{\text{eff}}^2 = -1.27$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.23$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.54$ ;  $R - 1 = 0.00734$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.29 ( $\Delta$  0.35) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.19 ( $\Delta$  -1.46)

## 16.7 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022314	$0.02232 \pm 0.00020$	$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.305 \pm 0.084$	$r_*$	147.03	$146.6 \pm 2.7$
$\Omega_c h^2$	0.11506	$0.1160 \pm 0.0047$	$A_{143}^{\text{dust}TE}$	0.153	$0.153 \pm 0.054$	$100\theta_*$	1.04184	$1.04175 \pm 0.00095$
$100\theta_{\text{MC}}$	1.04197	$1.0419 \pm 0.0013$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.335 \pm 0.080$	$D_A/\text{Gpc}$	14.113	$14.07 \pm 0.25$
$\tau$	0.0878	$0.085 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.666	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.86	$1059.97 \pm 0.80$
$N_{\text{eff}}$	2.789	$2.84^{+0.28}_{-0.32}$	$c_{100}$	0.99819	$0.99815 \pm 0.00078$	$r_{\text{drag}}$	149.76	$149.3 \pm 2.8$
$Y_P$	0.2608	$0.261^{+0.020}_{-0.018}$	$c_{217}$	0.99593	$0.9960 \pm 0.0015$	$k_D$	0.13828	$0.1386 \pm 0.0025$
$\ln(10^{10} A_s)$	3.1029	$3.099 \pm 0.035$	$H_0$	66.38	$66.6 \pm 1.6$	$100\theta_D$	0.160976	$0.16108 \pm 0.00048$
$n_s$	0.9664	$0.9664 \pm 0.0075$	$\Omega_\Lambda$	0.6868	$0.6867 \pm 0.0078$	$z_{\text{eq}}$	3400.1	$3400 \pm 34$
$y_{\text{cal}}$	1.00035	$1.0005 \pm 0.0025$	$\Omega_m$	0.3132	$0.3133 \pm 0.0078$	$k_{\text{eq}}$	0.010197	$0.01023 \pm 0.00015$
$A_{217}^{\text{CIB}}$	64.8	$64.1 \pm 6.6$	$\Omega_m h^2$	0.13802	$0.1389 \pm 0.0047$	$100\theta_{\text{eq}}$	0.8141	$0.8141 \pm 0.0059$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\Omega_m h^3$	0.0916	$0.0926^{+0.0049}_{-0.0057}$	$100\theta_{s,\text{eq}}$	0.44987	$0.4499 \pm 0.0030$
$A_{143}^{\text{tSZ}}$	6.98	$5.3 \pm 1.9$	$\sigma_8$	0.8277	$0.828 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.071531	$0.07153 \pm 0.00040$
$A_{100}^{\text{PS}}$	252.9	$261 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4632	$0.4632 \pm 0.0091$	$H(0.57)$	91.49	$91.8 \pm 1.8$
$A_{143}^{\text{PS}}$	43.6	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6192	$0.619 \pm 0.012$	$D_A(0.57)$	1411.9	$1408 \pm 30$
$A_{143 \times 217}^{\text{PS}}$	42.7	$40^{+10}_{-10}$	$\sigma_8/h^{0.5}$	1.0159	$1.014 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67646	$0.6765 \pm 0.0020$
$A_{217}^{\text{PS}}$	101.7	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5087	$2.505 \pm 0.039$	$f\sigma_8(0.57)$	0.4817	$0.4817 \pm 0.0093$
$A^{\text{kSZ}}$	0.00	$< 4.25$	$z_{\text{re}}$	10.81	$10.5^{+1.6}_{-1.4}$	$\sigma_8(0.57)$	0.6153	$0.615 \pm 0.013$
$A_{100}^{\text{dust}TT}$	7.47	$7.5 \pm 1.9$	$10^9 A_s$	2.226	$2.220 \pm 0.077$	$f_{2000}^{143}$	28.94	$30.0 \pm 3.1$
$A_{143}^{\text{dust}TT}$	8.99	$9.0 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8675	$1.871 \pm 0.020$	$f_{2000}^{143 \times 217}$	32.08	$32.6 \pm 2.3$
$A_{143 \times 217}^{\text{dust}TT}$	17.90	$17.1 \pm 4.2$	$D_{40}$	1234.7	$1236 \pm 15$	$f_{2000}^{217}$	105.57	$106.2 \pm 2.1$
$A_{217}^{\text{dust}TT}$	82.3	$81.6 \pm 7.4$	$D_{220}$	5724.3	$5728 \pm 39$	$\chi_{\text{lowTEB}}^2$	10497.26	$10497.7 \pm 2.6$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0812 \pm 0.0057$	$D_{810}$	2534.6	$2535 \pm 14$	$\chi_{\text{plik}}^2$	2430.7	$2451.2 \pm 9.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0488 \pm 0.0050$	$D_{1420}$	815.67	$814.7 \pm 4.8$	$\chi_{6\text{DF}}^2$	0.0471	$0.084 \pm 0.097$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.0995 \pm 0.033$	$D_{2000}$	230.88	$230.3 \pm 1.9$	$\chi_{\text{MGS}}^2$	1.097	$1.17 \pm 0.49$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1001 \pm 0.0069$	$n_{s,0.002}$	0.9664	$0.9664 \pm 0.0075$	$\chi_{\text{DR11CMass}}^2$	2.561	$2.97 \pm 0.76$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.223 \pm 0.046$	$Y_P$	0.2608	$0.261^{+0.020}_{-0.018}$	$\chi_{\text{DR11LOWZ}}^2$	0.81	$0.94 \pm 0.66$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.2622	$0.262^{+0.020}_{-0.018}$	$\chi_{\text{prior}}^2$	6.8	$19.5 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	Age/Gyr	14.025	$13.99 \pm 0.27$	$\chi_{\text{CMB}}^2$	12928.0	$12948.9 \pm 9.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1304	$0.131 \pm 0.030$	$z_*$	1090.067	$1090.16 \pm 0.44$	$\chi_{\text{BAO}}^2$	4.52	$5.2 \pm 1.1$

Best-fit  $\chi_{\text{eff}}^2 = 12939.26$ ;  $\Delta\chi_{\text{eff}}^2 = -0.90$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.52$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.04$ ;  $R - 1 = 0.01202$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.05 ( $\Delta$  0.02) MGS: 1.10 ( $\Delta$  -0.12) DR11CMass: 2.56 ( $\Delta$  0.06) DR11LOWZ: 0.81 ( $\Delta$  0.13) CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.26 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.70 ( $\Delta$  -0.84)

## 16.8 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022313	$0.02232 \pm 0.00023$	$A_{100 \times 143}^{\text{dust}TE}$	0.1308	$0.131 \pm 0.030$	Age/Gyr	13.932	$13.90 \pm 0.26$
$\Omega_c h^2$	0.11714	$0.1178 \pm 0.0045$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.304 \pm 0.085$	$z_*$	1090.127	$1090.17 \pm 0.44$
$100\theta_{\text{MC}}$	1.04154	$1.0415 \pm 0.0012$	$A_{143}^{\text{dust}TE}$	0.151	$0.153 \pm 0.054$	$r_*$	145.94	$145.6 \pm 2.6$
$\tau$	0.0853	$0.083 \pm 0.018$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.335 \pm 0.080$	$100\theta_*$	1.04148	$1.04141 \pm 0.00089$
$N_{\text{eff}}$	2.895	$2.94 \pm 0.28$	$A_{217}^{\text{dust}TE}$	1.677	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	14.013	$13.98 \pm 0.24$
$Y_P$	0.2565	$0.256^{+0.019}_{-0.017}$	$c_{100}$	0.99819	$0.99815 \pm 0.00079$	$z_{\text{drag}}$	1059.93	$1059.96 \pm 0.86$
$\ln(10^{10} A_s)$	3.1018	$3.099 \pm 0.037$	$c_{217}$	0.99589	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	148.65	$148.3 \pm 2.7$
$n_s$	0.9664	$0.9666 \pm 0.0089$	$H_0$	66.76	$67.0 \pm 1.7$	$k_D$	0.13924	$0.1395 \pm 0.0024$
$y_{\text{cal}}$	1.00022	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6856	$0.686 \pm 0.011$	$100\theta_D$	0.161006	$0.16107 \pm 0.00048$
$A_{217}^{\text{CIB}}$	65.3	$64.1 \pm 6.7$	$\Omega_m$	0.3144	$0.314 \pm 0.011$	$z_{\text{eq}}$	3401.4	$3399 \pm 43$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.24	—	$\Omega_m h^2$	0.14010	$0.1407 \pm 0.0045$	$k_{\text{eq}}$	0.010276	$0.01029 \pm 0.00015$
$A_{143}^{\text{tSZ}}$	7.06	$5.3^{+2.1}_{-1.9}$	$\Omega_m h^3$	0.0935	$0.0943 \pm 0.0051$	$100\theta_{\text{eq}}$	0.8136	$0.8142 \pm 0.0078$
$A_{100}^{\text{PS}}$	254.2	$261 \pm 28$	$\sigma_8$	0.8309	$0.831 \pm 0.017$	$100\theta_{s,\text{eq}}$	0.44962	$0.4499 \pm 0.0040$
$A_{143}^{\text{PS}}$	42.4	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.4652 \pm 0.0098$	$r_{\text{drag}}/D_V(0.57)$	0.07144	$0.07147 \pm 0.00057$
$A_{143 \times 217}^{\text{PS}}$	40.3	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6222	$0.622 \pm 0.012$	$H(0.57)$	92.08	$92.3 \pm 1.8$
$A_{217}^{\text{PS}}$	100.9	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0170	$1.015 \pm 0.017$	$D_A(0.57)$	1403.4	$1400 \pm 32$
$A^{\text{kSZ}}$	0.00	$< 4.26$	$\langle d^2 \rangle^{1/2}$	2.5104	$2.506 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67676	$0.6766 \pm 0.0028$
$A_{100}^{\text{dust}TT}$	7.41	$7.5 \pm 1.9$	$z_{\text{re}}$	10.62	$10.4^{+1.8}_{-1.5}$	$f\sigma_8(0.57)$	0.4839	$0.4834 \pm 0.0092$
$A_{143}^{\text{dust}TT}$	8.93	$9.0 \pm 1.8$	$10^9 A_s$	2.224	$2.219 \pm 0.081$	$\sigma_8(0.57)$	0.6174	$0.617 \pm 0.014$
$A_{143 \times 217}^{\text{dust}TT}$	17.60	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8750	$1.877 \pm 0.019$	$f_{2000}^{143}$	29.20	$30.0 \pm 3.1$
$A_{217}^{\text{dust}TT}$	82.0	$81.6 \pm 7.4$	$D_{40}$	1236.4	$1237 \pm 16$	$f_{2000}^{143 \times 217}$	32.24	$32.6 \pm 2.2$
$A_{100}^{\text{dust}EE}$	0.0812	$0.0812 \pm 0.0057$	$D_{220}$	5724.6	$5728 \pm 39$	$f_{2000}^{217}$	105.76	$106.2 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0489 \pm 0.0050$	$D_{810}$	2535.3	$2536 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.14	$10497.7 \pm 2.5$
$A_{100 \times 217}^{\text{dust}EE}$	0.0983	$0.0998 \pm 0.033$	$D_{1420}$	815.10	$814.6 \pm 4.8$	$\chi_{\text{plik}}^2$	2430.7	$2451.6 \pm 9.5$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1002 \pm 0.0069$	$D_{2000}$	230.56	$230.2 \pm 1.8$	$\chi_{\text{H070p6}}^2$	1.34	$1.4 \pm 1.2$
$A_{143 \times 217}^{\text{dust}EE}$	0.2237	$0.223 \pm 0.046$	$n_{s,0.002}$	0.9664	$0.9666 \pm 0.0089$	$\chi_{\text{prior}}^2$	6.9	$19.5 \pm 5.6$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.2565	$0.256^{+0.019}_{-0.017}$	$\chi_{\text{CMB}}^2$	12927.9	$12949.3 \pm 9.4$
$A_{100}^{\text{dust}TE}$	0.1415	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2578	$0.257^{+0.020}_{-0.017}$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.07$ ;  $\Delta\chi_{\text{eff}}^2 = -0.40$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.53$ ;  $R - 1 = 0.01172$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.14 ( $\Delta$  0.14) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.72 ( $\Delta$  -1.04) Hubble - H070p6: 1.33 ( $\Delta$  0.44)

## 16.9 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022384	$0.02238 \pm 0.00019$	$A_{143}^{\text{dust}TE}$	0.153	$0.152 \pm 0.054$	$D_A/\text{Gpc}$	13.977	$13.96 \pm 0.23$
$\Omega_c h^2$	0.11741	$0.1179 \pm 0.0045$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.334 \pm 0.080$	$z_{\text{drag}}$	1060.12	$1060.12 \pm 0.78$
$100\theta_{\text{MC}}$	1.04153	$1.0414 \pm 0.0012$	$A_{217}^{\text{dust}TE}$	1.660	$1.66 \pm 0.26$	$r_{\text{drag}}$	148.24	$148.0 \pm 2.6$
$\tau$	0.0881	$0.086 \pm 0.017$	$c_{100}$	0.99815	$0.99816 \pm 0.00079$	$k_D$	0.13953	$0.1398 \pm 0.0023$
$N_{\text{eff}}$	2.945	$2.98 \pm 0.27$	$c_{217}$	0.99602	$0.9960 \pm 0.0015$	$100\theta_D$	0.161092	$0.16111 \pm 0.00048$
$Y_P$	0.2572	$0.256^{+0.020}_{-0.017}$	$H_0$	67.30	$67.4 \pm 1.4$	$z_{\text{eq}}$	3386.6	$3384 \pm 32$
$\ln(10^{10} A_s)$	3.1081	$3.105 \pm 0.034$	$\Omega_\Lambda$	0.6899	$0.6901 \pm 0.0071$	$k_{\text{eq}}$	0.010266	$0.01028 \pm 0.00015$
$n_s$	0.9690	$0.9690 \pm 0.0072$	$\Omega_m$	0.3101	$0.3099 \pm 0.0071$	$100\theta_{\text{eq}}$	0.8165	$0.8169 \pm 0.0055$
$y_{\text{cal}}$	1.00026	$1.0005 \pm 0.0025$	$\Omega_m h^2$	0.14044	$0.1409 \pm 0.0045$	$100\theta_{s,\text{eq}}$	0.45107	$0.4513 \pm 0.0028$
$A_{217}^{\text{CIB}}$	67.0	$64.2 \pm 6.6$	$\Omega_m h^3$	0.09451	$0.0951 \pm 0.0049$	$r_{\text{drag}}/D_V(0.57)$	0.071667	$0.07168 \pm 0.00038$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$\sigma_8$	0.8333	$0.833 \pm 0.016$	$H(0.57)$	92.53	$92.7 \pm 1.7$
$A_{143}^{\text{tSZ}}$	7.20	$5.3^{+2.2}_{-1.9}$	$\sigma_8 \Omega_m^{0.5}$	0.4640	$0.4635 \pm 0.0091$	$D_A(0.57)$	1394.4	$1392 \pm 27$
$A_{100}^{\text{PS}}$	256.1	$261 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.621 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67567	$0.6756 \pm 0.0018$
$A_{143}^{\text{PS}}$	39.5	$44 \pm 8$	$\sigma_8/h^{0.5}$	1.0157	$1.014 \pm 0.017$	$f\sigma_8(0.57)$	0.4841	$0.4837 \pm 0.0092$
$A_{143 \times 217}^{\text{PS}}$	34.2	$40^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.5062	$2.502 \pm 0.039$	$\sigma_8(0.57)$	0.6202	$0.620 \pm 0.013$
$A_{217}^{\text{PS}}$	98.0	$98 \pm 10$	$z_{\text{re}}$	10.86	$10.6^{+1.6}_{-1.4}$	$f_{2000}^{143}$	29.63	$30.0 \pm 3.1$
$A^{\text{kSZ}}$	0.00	$< 4.30$	$10^9 A_s$	2.238	$2.232 \pm 0.076$	$f_{2000}^{143 \times 217}$	32.41	$32.6 \pm 2.3$
$A_{100}^{\text{dust}TT}$	7.45	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8763	$1.878 \pm 0.019$	$f_{2000}^{217}$	106.07	$106.2 \pm 2.1$
$A_{143}^{\text{dust}TT}$	8.99	$9.0 \pm 1.8$	$D_{40}$	1233.8	$1234 \pm 15$	$\chi_{\text{lowTEB}}^2$	10497.07	$10497.5 \pm 2.5$
$A_{143 \times 217}^{\text{dust}TT}$	17.56	$17.1 \pm 4.2$	$D_{220}$	5728.1	$5729 \pm 39$	$\chi_{\text{plik}}^2$	2431.0	$2451.6 \pm 7.1$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$D_{810}$	2534.9	$2536 \pm 14$	$\chi_{\text{H070p6}}^2$	0.99	$1.09 \pm 0.85$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0815 \pm 0.0057$	$D_{1420}$	814.66	$814.7 \pm 4.8$	$\chi_{\text{JLA}}^2$	706.709	$706.75 \pm 0.20$
$A_{100 \times 143}^{\text{dust}EE}$	0.04884	$0.0492 \pm 0.0049$	$D_{2000}$	230.29	$230.2 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.0217	$0.053 \pm 0.068$
$A_{100 \times 217}^{\text{dust}EE}$	0.0987	$0.0996 \pm 0.032$	$n_{s,0.002}$	0.9690	$0.9690 \pm 0.0072$	$\chi_{\text{MGS}}^2$	1.28	$1.36 \pm 0.49$
$A_{143}^{\text{dust}EE}$	0.1002	$0.1004 \pm 0.0069$	$Y_P$	0.2572	$0.256^{+0.020}_{-0.017}$	$\chi_{\text{DR11CMass}}^2$	2.443	$2.79 \pm 0.54$
$A_{143 \times 217}^{\text{dust}EE}$	0.2223	$0.222 \pm 0.046$	$Y_P^{\text{BBN}}$	0.2586	$0.257^{+0.020}_{-0.017}$	$\chi_{\text{DR11LOWZ}}^2$	0.606	$0.70 \pm 0.53$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	Age/Gyr	13.873	$13.85 \pm 0.24$	$\chi_{\text{prior}}^2$	7.2	$19.6 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1398	$0.141 \pm 0.038$	$z_*$	1090.111	$1090.12 \pm 0.44$	$\chi_{\text{CMB}}^2$	12928.0	$12949.1 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	0.1303	$0.131 \pm 0.030$	$r_*$	145.56	$145.3 \pm 2.5$	$\chi_{\text{BAO}}^2$	4.350	$4.91 \pm 0.80$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.085$	$100\theta_*$	1.04143	$1.04136 \pm 0.00088$			

Best-fit  $\chi_{\text{eff}}^2 = 13647.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 13681.50$ ;  $R - 1 = 0.01798$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 MGS: 1.28 DR11CMass: 2.44 DR11LOWZ: 0.61 CMB - lowl\_SMW\_70\_dx11d\_2014.10.03\_v5c\_Ap: 10497.07 plik\_dx11dr2\_HM\_v18\_TTTEEE:

## 16.10 base\_nnu\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022159	$0.02217 \pm 0.00024$	$A_{100 \times 143}^{\text{dust}TE}$	0.1320	$0.132 \pm 0.030$	Age/Gyr	14.158	$14.11 \pm 0.29$
$\Omega_c h^2$	0.11379	$0.1148^{+0.0044}_{-0.0050}$	$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.306 \pm 0.084$	$z_*$	1090.109	$1090.14 \pm 0.45$
$100\theta_{MC}$	1.04223	$1.0421 \pm 0.0013$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.053$	$r_*$	148.12	$147.6 \pm 2.8$
$\tau$	0.0616	$0.061 \pm 0.015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$100\theta_*$	1.04213	$1.04199 \pm 0.00096$
$N_{\text{eff}}$	2.672	$2.73^{+0.29}_{-0.34}$	$A_{217}^{\text{dust}TE}$	1.673	$1.67 \pm 0.26$	$D_A/\text{Gpc}$	14.213	$14.16 \pm 0.26$
$Y_P$	0.2611	$0.259^{+0.020}_{-0.017}$	$c_{100}$	0.99813	$0.99812 \pm 0.00078$	$z_{\text{drag}}$	1059.40	$1059.43 \pm 0.90$
$\ln(10^{10} A_s)$	3.0460	$3.048 \pm 0.030$	$c_{217}$	0.99609	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	150.92	$150.4 \pm 2.9$
$n_s$	0.9600	$0.9608 \pm 0.0095$	$H_0$	65.40	$65.7^{+1.9}_{-2.1}$	$k_D$	0.13738	$0.1379^{+0.0025}_{-0.0028}$
$y_{\text{cal}}$	0.99999	$1.0002 \pm 0.0025$	$\Omega_\Lambda$	0.6807	$0.681 \pm 0.012$	$100\theta_D$	0.160893	$0.16094 \pm 0.00049$
$A_{217}^{\text{CIB}}$	67.7	$64.6 \pm 6.6$	$\Omega_m$	0.3193	$0.319 \pm 0.012$	$z_{\text{eq}}$	3420.7	$3418 \pm 47$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.13660	$0.1376^{+0.0044}_{-0.0051}$	$k_{\text{eq}}$	0.010175	$0.01021 \pm 0.00015$
$A_{143}^{\text{tSZ}}$	7.29	$5.3^{+2.2}_{-1.9}$	$\Omega_m h^3$	0.0893	$0.0905^{+0.0050}_{-0.0061}$	$100\theta_{\text{eq}}$	0.8101	$0.8107 \pm 0.0085$
$A_{100}^{\text{PS}}$	257.0	$262 \pm 29$	$\sigma_8$	0.8028	$0.805 \pm 0.014$	$100\theta_{s,\text{eq}}$	0.44791	$0.4482 \pm 0.0043$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.4545 \pm 0.0068$	$r_{\text{drag}}/D_V(0.57)$	0.07124	$0.07126 \pm 0.00060$
$A_{143 \times 217}^{\text{PS}}$	33.3	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6035	$0.6048 \pm 0.0082$	$H(0.57)$	90.55	$90.9^{+2.0}_{-2.2}$
$A_{217}^{\text{PS}}$	97.1	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9927	$0.993 \pm 0.011$	$D_A(0.57)$	1429.7	$1424 \pm 36$
$A^{\text{kSZ}}$	0.00	$< 4.64$	$\langle d^2 \rangle^{1/2}$	2.4603	$2.461 \pm 0.026$	$F_{\text{AP}}(0.57)$	0.67801	$0.6779 \pm 0.0030$
$A_{100}^{\text{dust}TT}$	7.43	$7.5 \pm 1.9$	$z_{\text{re}}$	8.41	$8.3^{+1.6}_{-1.3}$	$f\sigma_8(0.57)$	0.4687	$0.4698 \pm 0.0068$
$A_{143}^{\text{dust}TT}$	9.07	$9.1 \pm 1.8$	$10^9 A_s$	2.103	$2.107 \pm 0.064$	$\sigma_8(0.57)$	0.5954	$0.597 \pm 0.013$
$A_{143 \times 217}^{\text{dust}TT}$	17.70	$17.2 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8591	$1.863 \pm 0.020$	$f_{2000}^{143}$	29.94	$30.4 \pm 3.1$
$A_{217}^{\text{dust}TT}$	82.0	$81.6 \pm 7.4$	$D_{40}$	1232.8	$1234 \pm 16$	$f_{2000}^{143 \times 217}$	32.73	$32.9 \pm 2.3$
$A_{100}^{\text{dust}EE}$	0.0806	$0.0810 \pm 0.0057$	$D_{220}$	5719.2	$5721 \pm 38$	$f_{2000}^{217}$	106.27	$106.4 \pm 2.2$
$A_{100 \times 143}^{\text{dust}EE}$	0.0482	$0.0485 \pm 0.0051$	$D_{810}$	2531.5	$2533 \pm 14$	$\chi^2_{\text{lensing}}$	9.59	$10.4 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0992	$0.0998 \pm 0.032$	$D_{1420}$	814.78	$814.8 \pm 4.8$	$\chi^2_{\text{lowTEB}}$	10495.75	$10496.4 \pm 1.7$
$A_{143}^{\text{dust}EE}$	0.0996	$0.0999 \pm 0.0070$	$D_{2000}$	230.24	$230.2 \pm 1.8$	$\chi^2_{\text{plik}}$	2433.5	$2453.9 \pm 7.2$
$A_{143 \times 217}^{\text{dust}EE}$	0.2238	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9600	$0.9608 \pm 0.0095$	$\chi^2_{\text{prior}}$	6.9	$19.4 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.659	$0.65 \pm 0.13$	$Y_P$	0.2611	$0.259^{+0.020}_{-0.017}$	$\chi^2_{\text{CMB}}$	12938.8	$12960.6 \pm 7.2$
$A_{100}^{\text{dust}TE}$	0.1409	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2625	$0.260^{+0.020}_{-0.017}$			

Best-fit  $\chi^2_{\text{eff}} = 12945.71$ ;  $\Delta\chi^2_{\text{eff}} = -1.47$ ;  $\bar{\chi}^2_{\text{eff}} = 12979.99$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.87$ ;  $R - 1 = 0.02911$  $\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.59 ( $\Delta$  -0.19) lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.75 ( $\Delta$  0.46) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2433.48 ( $\Delta$  -1.43)

## 17 nrun

### 17.1 base\_nrun\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022366	$0.02236 \pm 0.00027$	$\Omega_m$	0.3128	$0.313 \pm 0.014$	$D_A/\text{Gpc}$	13.8841	$13.883 \pm 0.047$
$\Omega_c h^2$	0.11956	$0.1196 \pm 0.0023$	$\Omega_m h^2$	0.14257	$0.1426 \pm 0.0021$	$z_{\text{drag}}$	1059.89	$1059.88 \pm 0.56$
$100\theta_{\text{MC}}$	1.040925	$1.04093 \pm 0.00049$	$\Omega_m h^3$	0.09624	$0.09624 \pm 0.00053$	$r_{\text{drag}}$	147.21	$147.21 \pm 0.51$
$\tau$	0.0872	$0.088^{+0.021}_{-0.024}$	$\sigma_8$	0.8354	$0.836 \pm 0.016$	$k_D$	0.14074	$0.14073 \pm 0.00057$
$\ln(10^{10} A_s)$	3.1097	$3.111^{+0.042}_{-0.047}$	$\sigma_8 \Omega_m^{0.5}$	0.4673	$0.468 \pm 0.014$	$100\theta_D$	0.160779	$0.16079 \pm 0.00032$
$n_s$	0.9658	$0.9651 \pm 0.0066$	$\sigma_8 \Omega_m^{0.25}$	0.6248	$0.625 \pm 0.014$	$z_{\text{eq}}$	3392	$3393 \pm 51$
$dn_s/d \ln k$	-0.0071	$-0.0084 \pm 0.0082$	$\sigma_8/h^{0.5}$	1.0168	$1.017 \pm 0.021$	$k_{\text{eq}}$	0.010351	$0.01036 \pm 0.00016$
$y_{\text{cal}}$	1.00034	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5035	$2.505 \pm 0.047$	$100\theta_{\text{eq}}$	0.8152	$0.8151 \pm 0.0097$
$A_{217}^{\text{CIB}}$	67.8	$64.6 \pm 6.7$	$z_{\text{re}}$	10.76	$10.7 \pm 1.9$	$100\theta_{s,\text{eq}}$	0.45038	$0.4503 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.241	$2.247^{+0.091}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07149	$0.07148 \pm 0.00077$
$A_{143}^{\text{tSZ}}$	7.11	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8829	$1.884 \pm 0.014$	$H(0.57)$	93.011	$93.01 \pm 0.45$
$A_{100}^{\text{PS}}$	255.3	$261 \pm 28$	$D_{40}$	1221.9	$1222 \pm 22$	$D_A(0.57)$	1388.6	$1389 \pm 14$
$A_{143}^{\text{PS}}$	39.9	$45 \pm 8$	$D_{220}$	5720.0	$5721 \pm 41$	$F_{\text{AP}}(0.57)$	0.67637	$0.6765 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$D_{810}$	2536.7	$2537 \pm 14$	$f\sigma_8(0.57)$	0.4861	$0.486 \pm 0.010$
$A_{217}^{\text{PS}}$	97.1	$97 \pm 10$	$D_{1420}$	814.1	$813.4 \pm 5.2$	$\sigma_8(0.57)$	0.6212	$0.621^{+0.012}_{-0.014}$
$A^{\text{kSZ}}$	0.00	$< 5.12$	$D_{2000}$	230.12	$229.8 \pm 2.0$	$f_{2000}^{143}$	30.26	$30.9 \pm 3.1$
$A_{100}^{\text{dustTT}}$	7.42	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9888	$0.992 \pm 0.027$	$f_{2000}^{143 \times 217}$	32.77	$33.1 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245391	$0.24539 \pm 0.00012$	$f_{2000}^{217}$	106.35	$106.6 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.75	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246718	$0.24671 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10495.01	$10496.2 \pm 2.9$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.592	$2.594 \pm 0.051$	$\chi_{\text{plik}}^2$	764.1	$778.6 \pm 5.9$
$c_{100}$	0.99793	$0.99792 \pm 0.00077$	Age/Gyr	13.7959	$13.796 \pm 0.043$	$\chi_{\text{prior}}^2$	2.03	$7.3 \pm 3.5$
$c_{217}$	0.99604	$0.9960 \pm 0.0014$	$z_*$	1089.885	$1089.90 \pm 0.48$	$\chi_{\text{CMB}}^2$	11259.1	$11274.8 \pm 5.7$
$H_0$	67.51	$67.5 \pm 1.0$	$r_*$	144.55	$144.54 \pm 0.51$			
$\Omega_\Lambda$	0.6872	$0.687^{+0.015}_{-0.014}$	$100\theta_*$	1.041110	$1.04111 \pm 0.00047$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.11$ ;  $\Delta\chi_{\text{eff}}^2 = -0.81$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.07$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.25$ ;  $R - 1 = 0.00699$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.01 ( $\Delta$  -1.46) plik\_dx11dr2\_HM\_v18\_TT: 764.08 ( $\Delta$  0.70)

## 17.2 base\_nrun\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022430	$0.02240 \pm 0.00024$	$\Omega_m h^2$	0.14202	$0.1421 \pm 0.0012$	$r_{\text{drag}}$	147.303	$147.33 \pm 0.38$
$\Omega_c h^2$	0.11894	$0.1190 \pm 0.0013$	$\Omega_m h^3$	0.09630	$0.09625 \pm 0.00053$	$k_D$	0.14069	$0.14064 \pm 0.00052$
$100\theta_{\text{MC}}$	1.041010	$1.04101 \pm 0.00042$	$\sigma_8$	0.8371	$0.836 \pm 0.016$	$100\theta_D$	0.160724	$0.16077 \pm 0.00031$
$\tau$	0.0922	$0.090 \pm 0.020$	$\sigma_8 \Omega_m^{0.5}$	0.4652	$0.465 \pm 0.011$	$z_{\text{eq}}$	3378.4	$3379 \pm 30$
$\ln(10^{10} A_s)$	3.1187	$3.115 \pm 0.041$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.623 \pm 0.013$	$k_{\text{eq}}$	0.010311	$0.010314 \pm 0.000091$
$n_s$	0.96726	$0.9666 \pm 0.0047$	$\sigma_8/h^{0.5}$	1.0166	$1.015 \pm 0.020$	$100\theta_{\text{eq}}$	0.8178	$0.8176 \pm 0.0055$
$dn_s/d \ln k$	-0.0082	$-0.0085 \pm 0.0082$	$\langle d^2 \rangle^{1/2}$	2.5025	$2.500 \pm 0.044$	$100\theta_{s,\text{eq}}$	0.45169	$0.4516 \pm 0.0029$
$y_{\text{cal}}$	1.00036	$1.0004 \pm 0.0025$	$z_{\text{re}}$	11.17	$11.0 \pm 1.7$	$r_{\text{drag}}/D_V(0.57)$	0.071706	$0.07169 \pm 0.00043$
$A_{217}^{\text{CIB}}$	67.5	$64.5 \pm 6.7$	$10^9 A_s$	2.262	$2.256^{+0.088}_{-0.10}$	$H(0.57)$	93.143	$93.12 \pm 0.29$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8806	$1.881 \pm 0.012$	$D_A(0.57)$	1384.6	$1385.3 \pm 8.0$
$A_{143}^{\text{tSZ}}$	7.18	$4.9 \pm 2.0$	$D_{40}$	1218.5	$1219 \pm 20$	$F_{\text{AP}}(0.57)$	0.67537	$0.6755 \pm 0.0020$
$A_{100}^{\text{PS}}$	254.5	$261 \pm 28$	$D_{220}$	5723.0	$5723 \pm 40$	$f\sigma_8(0.57)$	0.4860	$0.4854 \pm 0.0096$
$A_{143}^{\text{PS}}$	39.5	$45^{+9}_{-8}$	$D_{810}$	2536.4	$2536 \pm 14$	$\sigma_8(0.57)$	0.6234	$0.622 \pm 0.012$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+10}_{-10}$	$D_{1420}$	814.3	$813.7 \pm 5.1$	$f_{2000}^{143}$	30.08	$30.7 \pm 3.1$
$A_{217}^{\text{PS}}$	97.1	$97 \pm 10$	$D_{2000}$	230.26	$230.0 \pm 1.9$	$f_{2000}^{143 \times 217}$	32.62	$32.9 \pm 2.2$
$A^{\text{kSZ}}$	0.00	$< 5.07$	$n_{s,0.002}$	0.9935	$0.994 \pm 0.026$	$f_{2000}^{217}$	106.18	$106.5 \pm 2.1$
$A_{100}^{\text{dustTT}}$	7.49	$7.5 \pm 1.9$	$Y_{\text{P}}$	0.245419	$0.24540 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10495.11	$10496.1 \pm 2.8$
$A_{143}^{\text{dustTT}}$	9.09	$9.0 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.246746	$0.24673 \pm 0.00011$	$\chi_{\text{plik}}^2$	764.1	$778.0 \pm 5.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.2 \pm 4.2$	$10^5 D/H$	2.5801	$2.587 \pm 0.045$	$\chi_{6\text{DF}}^2$	0.0155	$0.059 \pm 0.078$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.5$	Age/Gyr	13.7842	$13.788 \pm 0.032$	$\chi_{\text{MGS}}^2$	1.34	$1.39 \pm 0.55$
$c_{100}$	0.99794	$0.99791 \pm 0.00077$	$z_*$	1089.753	$1089.80 \pm 0.34$	$\chi_{\text{DR11CMass}}^2$	2.434	$2.90 \pm 0.69$
$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$r_*$	144.659	$144.67 \pm 0.34$	$\chi_{\text{DR11LOWZ}}^2$	0.547	$0.72 \pm 0.60$
$H_0$	67.81	$67.76 \pm 0.58$	$100\theta_*$	1.041191	$1.04119 \pm 0.00041$	$\chi_{\text{prior}}^2$	2.02	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6911	$0.6905 \pm 0.0077$	$D_A/\text{Gpc}$	13.8936	$13.894 \pm 0.033$	$\chi_{\text{CMB}}^2$	11259.2	$11274.1 \pm 5.6$
$\Omega_m$	0.3089	$0.3095 \pm 0.0077$	$z_{\text{drag}}$	1060.01	$1059.93 \pm 0.54$	$\chi_{\text{BAO}}^2$	4.34	$5.1 \pm 1.0$

Best-fit  $\chi_{\text{eff}}^2 = 11265.56$ ;  $\Delta\chi_{\text{eff}}^2 = -0.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11286.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.08$ ;  $R - 1 = 0.00796$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.43 ( $\Delta$  -0.02) DR11LOWZ: 0.55 ( $\Delta$  -0.07) CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.11 ( $\Delta$  -1.31) plik\_dx11dr2\_HM\_v18\_TT: 764.09 ( $\Delta$  0.49)

### 17.3 base\_nrun\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022402	$0.02239 \pm 0.00027$	$\Omega_m$	0.3106	$0.311 \pm 0.013$	$D_A/\text{Gpc}$	13.8893	$13.891 \pm 0.044$
$\Omega_c h^2$	0.11922	$0.1192 \pm 0.0021$	$\Omega_m h^2$	0.14226	$0.1422 \pm 0.0020$	$z_{\text{drag}}$	1059.97	$1059.92 \pm 0.56$
$100\theta_{\text{MC}}$	1.040972	$1.04098 \pm 0.00047$	$\Omega_m h^3$	0.09627	$0.09625 \pm 0.00053$	$r_{\text{drag}}$	147.261	$147.29 \pm 0.49$
$\tau$	0.0895	$0.090^{+0.021}_{-0.024}$	$\sigma_8$	0.8361	$0.836 \pm 0.016$	$k_D$	0.14071	$0.14067 \pm 0.00056$
$\ln(10^{10} A_s)$	3.1138	$3.115 \pm 0.043$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.466 \pm 0.013$	$100\theta_D$	0.160748	$0.16077 \pm 0.00032$
$n_s$	0.9669	$0.9662 \pm 0.0063$	$\sigma_8 \Omega_m^{0.25}$	0.6242	$0.624 \pm 0.014$	$z_{\text{eq}}$	3384.2	$3383 \pm 47$
$dn_s/d \ln k$	-0.0077	$-0.0086 \pm 0.0082$	$\sigma_8/h^{0.5}$	1.0163	$1.016 \pm 0.020$	$k_{\text{eq}}$	0.010329	$0.01033 \pm 0.00014$
$y_{\text{cal}}$	1.00037	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5013	$2.502 \pm 0.046$	$100\theta_{\text{eq}}$	0.8166	$0.8169 \pm 0.0090$
$A_{217}^{\text{CIB}}$	67.4	$64.5 \pm 6.7$	$z_{\text{re}}$	10.95	$10.9 \pm 1.9$	$100\theta_{s,\text{eq}}$	0.45111	$0.4513 \pm 0.0046$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.251	$2.255^{+0.092}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07161	$0.07163 \pm 0.00072$
$A_{143}^{\text{tSZ}}$	6.99	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8817	$1.882 \pm 0.014$	$H(0.57)$	93.084	$93.09 \pm 0.43$
$A_{100}^{\text{PS}}$	254.4	$261 \pm 28$	$D_{40}$	1219.2	$1220 \pm 21$	$D_A(0.57)$	1386.3	$1386 \pm 13$
$A_{143}^{\text{PS}}$	40.2	$45 \pm 8$	$D_{220}$	5720.6	$5722 \pm 41$	$F_{\text{AP}}(0.57)$	0.67581	$0.6758 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	33.5	$39^{+10}_{-10}$	$D_{810}$	2536.9	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4859	$0.4857 \pm 0.0099$
$A_{217}^{\text{PS}}$	97.5	$97 \pm 10$	$D_{1420}$	814.5	$813.6 \pm 5.2$	$\sigma_8(0.57)$	0.6222	$0.622^{+0.012}_{-0.014}$
$A^{\text{kSZ}}$	0.02	$< 5.08$	$D_{2000}$	230.29	$229.9 \pm 2.0$	$f_{2000}^{143}$	30.07	$30.8 \pm 3.2$
$A_{100}^{\text{dustTT}}$	7.53	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9916	$0.994 \pm 0.027$	$f_{2000}^{143 \times 217}$	32.60	$33.0 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$Y_P$	0.245407	$0.24540 \pm 0.00012$	$f_{2000}^{217}$	106.16	$106.5 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.40	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246733	$0.24673 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10494.94	$10496.2 \pm 2.9$
$A_{217}^{\text{dustTT}}$	81.4	$81.7 \pm 7.5$	$10^5 D/H$	2.5853	$2.588 \pm 0.050$	$\chi_{\text{plik}}^2$	764.3	$778.5 \pm 6.0$
$c_{100}$	0.99793	$0.99791 \pm 0.00077$	Age/Gyr	13.7894	$13.790 \pm 0.041$	$\chi_{\text{JLA}}^2$	706.724	$706.86 \pm 0.41$
$c_{217}$	0.99589	$0.9960 \pm 0.0015$	$z_*$	1089.810	$1089.83 \pm 0.45$	$\chi_{\text{prior}}^2$	1.94	$7.3 \pm 3.5$
$H_0$	67.67	$67.69 \pm 0.95$	$r_*$	144.609	$144.63 \pm 0.48$	$\chi_{\text{CMB}}^2$	11259.2	$11274.7 \pm 5.7$
$\Omega_\Lambda$	0.6894	$0.689 \pm 0.013$	$100\theta_*$	1.041156	$1.04117 \pm 0.00046$			

Best-fit  $\chi_{\text{eff}}^2 = 11967.90$ ;  $\Delta\chi_{\text{eff}}^2 = -0.84$ ;  $\bar{\chi}_{\text{eff}}^2 = 11988.82$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.22$ ;  $R - 1 = 0.00688$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c\_Ap: 10494.94 ( $\Delta$  -1.50) plik\_dx11dr2\_HM\_v18\_TT: 764.30 ( $\Delta$  0.88) SN - JLA December\_2013: 706.72 ( $\Delta$  -0.04)



## 17.4 base\_nrun\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022307	$0.02229 \pm 0.00026$	$\Omega_m$	0.3066	$0.307^{+0.012}_{-0.014}$	$D_A/\text{Gpc}$	13.9152	$13.917 \pm 0.043$
$\Omega_c h^2$	0.11842	$0.1184 \pm 0.0021$	$\Omega_m h^2$	0.14137	$0.1413 \pm 0.0020$	$z_{\text{drag}}$	1059.67	$1059.64 \pm 0.53$
$100\theta_{\text{MC}}$	1.041038	$1.04106 \pm 0.00047$	$\Omega_m h^3$	0.095991	$0.09597 \pm 0.00050$	$r_{\text{drag}}$	147.582	$147.61 \pm 0.46$
$\tau$	0.0678	$0.068 \pm 0.017$	$\sigma_8$	0.8157	$0.8156 \pm 0.0094$	$k_D$	0.14030	$0.14026 \pm 0.00051$
$\ln(10^{10} A_s)$	3.0664	$3.068 \pm 0.031$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.4516 \pm 0.0090$	$100\theta_D$	0.160915	$0.16094 \pm 0.00030$
$n_s$	0.9682	$0.9675 \pm 0.0062$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.6069 \pm 0.0076$	$z_{\text{eq}}$	3362.9	$3362 \pm 47$
$dn_s/d \ln k$	-0.0023	$-0.0033 \pm 0.0074$	$\sigma_8/h^{0.5}$	0.9899	$0.990 \pm 0.011$	$k_{\text{eq}}$	0.010264	$0.01026 \pm 0.00014$
$y_{\text{cal}}$	1.00010	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4449	$2.445 \pm 0.027$	$100\theta_{\text{eq}}$	0.8203	$0.8206 \pm 0.0090$
$A_{217}^{\text{CIB}}$	67.8	$65.1 \pm 6.7$	$z_{\text{re}}$	8.99	$9.0^{+1.7}_{-1.4}$	$100\theta_{s,\text{eq}}$	0.45309	$0.4532 \pm 0.0046$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.146	$2.150 \pm 0.068$	$r_{\text{drag}}/D_V(0.57)$	0.07186	$0.07188 \pm 0.00073$
$A_{143}^{\text{tSZ}}$	7.24	$4.8 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8743	$1.875 \pm 0.013$	$H(0.57)$	93.112	$93.12 \pm 0.44$
$A_{100}^{\text{PS}}$	255.2	$263 \pm 28$	$D_{40}$	1219.3	$1219 \pm 21$	$D_A(0.57)$	1383.8	$1384 \pm 13$
$A_{143}^{\text{PS}}$	39.5	$45 \pm 8$	$D_{220}$	5716.8	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67479	$0.6748 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	32.9	$38^{+10}_{-10}$	$D_{810}$	2533.2	$2533 \pm 14$	$f\sigma_8(0.57)$	0.4730	$0.4729 \pm 0.0053$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$D_{1420}$	814.8	$813.9 \pm 5.3$	$\sigma_8(0.57)$	0.6080	$0.6080 \pm 0.0086$
$A^{\text{kSZ}}$	0.00	$< 5.49$	$D_{2000}$	230.05	$229.7 \pm 2.0$	$f_{2000}^{143}$	30.20	$31.2 \pm 3.1$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.8$	$n_{s,0.002}$	0.9756	$0.978 \pm 0.024$	$f_{2000}^{143 \times 217}$	32.75	$33.3 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.8$	$Y_P$	0.245365	$0.24536 \pm 0.00012$	$f_{2000}^{217}$	106.24	$106.7 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.81	$17.3 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246692	$0.24668 \pm 0.00012$	$\chi_{\text{lensing}}^2$	9.36	$10.1 \pm 1.7$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^5 D/H$	2.6032	$2.606 \pm 0.049$	$\chi_{\text{lowTEB}}^2$	10494.21	$10495.2 \pm 2.3$
$c_{100}$	0.99793	$0.99789 \pm 0.00076$	Age/Gyr	13.7935	$13.794 \pm 0.042$	$\chi_{\text{plik}}^2$	766.7	$780.7 \pm 5.9$
$c_{217}$	0.99601	$0.9960 \pm 0.0014$	$z_*$	1089.860	$1089.88 \pm 0.45$	$\chi_{\text{prior}}^2$	2.10	$7.3 \pm 3.6$
$H_0$	67.90	$67.91 \pm 0.97$	$r_*$	144.889	$144.91 \pm 0.46$	$\chi_{\text{CMB}}^2$	11270.2	$11286.0 \pm 5.7$
$\Omega_\Lambda$	0.6934	$0.693^{+0.014}_{-0.012}$	$100\theta_*$	1.041233	$1.04126 \pm 0.00046$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.34$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.36$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.06$ ;  $R - 1 = 0.02203$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.36 ( $\Delta$  0.18) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.21 ( $\Delta$  -0.65) plik\_dx11dr2\_HM\_v18\_TT: 766.68 ( $\Delta$  0.35)

### 17.5 base\_nrun\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022404	$0.02241 \pm 0.00027$	$\Omega_m$	0.3099	$0.310 \pm 0.013$	$D_A/\text{Gpc}$	13.8918	$13.893 \pm 0.046$
$\Omega_c h^2$	0.11910	$0.1191 \pm 0.0022$	$\Omega_m h^2$	0.14215	$0.1421 \pm 0.0020$	$z_{\text{drag}}$	1059.93	$1059.95 \pm 0.56$
$100\theta_{\text{MC}}$	1.041003	$1.04101 \pm 0.00048$	$\Omega_m h^3$	0.09627	$0.09627 \pm 0.00053$	$r_{\text{drag}}$	147.294	$147.30 \pm 0.50$
$\tau$	0.0894	$0.091^{+0.022}_{-0.024}$	$\sigma_8$	0.8354	$0.836 \pm 0.016$	$k_D$	0.14068	$0.14067 \pm 0.00057$
$\ln(10^{10} A_s)$	3.1129	$3.116 \pm 0.044$	$\sigma_8 \Omega_m^{0.5}$	0.4650	$0.465 \pm 0.013$	$100\theta_D$	0.160753	$0.16076 \pm 0.00032$
$n_s$	0.9670	$0.9665 \pm 0.0064$	$\sigma_8 \Omega_m^{0.25}$	0.6233	$0.624 \pm 0.014$	$z_{\text{eq}}$	3381.4	$3381 \pm 49$
$dn_s/d \ln k$	-0.0074	$-0.0088 \pm 0.0082$	$\sigma_8/h^{0.5}$	1.0151	$1.016 \pm 0.021$	$k_{\text{eq}}$	0.010320	$0.01032 \pm 0.00015$
$y_{\text{cal}}$	1.00024	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4992	$2.501 \pm 0.046$	$100\theta_{\text{eq}}$	0.8172	$0.8175 \pm 0.0093$
$A_{217}^{\text{CIB}}$	67.6	$64.5 \pm 6.7$	$z_{\text{re}}$	10.93	$11.0 \pm 1.9$	$100\theta_{s,\text{eq}}$	0.45139	$0.4515 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.249	$2.258^{+0.092}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.07168 \pm 0.00074$
$A_{143}^{\text{tSZ}}$	7.13	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8805	$1.881 \pm 0.014$	$H(0.57)$	93.105	$93.12 \pm 0.44$
$A_{100}^{\text{PS}}$	254.5	$261 \pm 28$	$D_{40}$	1219.2	$1219 \pm 21$	$D_A(0.57)$	1385.6	$1385 \pm 13$
$A_{143}^{\text{PS}}$	39.4	$45 \pm 8$	$D_{220}$	5720.2	$5723 \pm 41$	$F_{\text{AP}}(0.57)$	0.67562	$0.6756 \pm 0.0034$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39 \pm 10$	$D_{810}$	2536.0	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4853	$0.486 \pm 0.010$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$D_{1420}$	814.3	$813.8 \pm 5.2$	$\sigma_8(0.57)$	0.6219	$0.623^{+0.012}_{-0.014}$
$A^{\text{kSZ}}$	0.00	$< 5.06$	$D_{2000}$	230.23	$230.0 \pm 2.0$	$f_{2000}^{143}$	30.01	$30.7 \pm 3.2$
$A_{100}^{\text{dustTT}}$	7.49	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9908	$0.995 \pm 0.027$	$f_{2000}^{143 \times 217}$	32.58	$32.9 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.09	$9.0 \pm 1.8$	$Y_P$	0.245408	$0.24541 \pm 0.00012$	$f_{2000}^{217}$	106.15	$106.5 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	17.65	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.246734	$0.24673 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10494.98	$10496.2 \pm 2.9$
$A_{217}^{\text{dustTT}}$	81.8	$81.7 \pm 7.5$	$10^5 D/H$	2.585	$2.585 \pm 0.050$	$\chi_{\text{plik}}^2$	764.1	$778.6 \pm 6.0$
$c_{100}$	0.99790	$0.99791 \pm 0.00077$	Age/Gyr	13.7878	$13.787 \pm 0.042$	$\chi_{\text{H070p6}}^2$	0.746	$0.82 \pm 0.51$
$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$z_*$	1089.797	$1089.80 \pm 0.46$	$\chi_{\text{prior}}^2$	2.07	$7.3 \pm 3.5$
$H_0$	67.73	$67.76 \pm 0.99$	$r_*$	144.639	$144.65 \pm 0.49$	$\chi_{\text{CMB}}^2$	11259.1	$11274.8 \pm 5.7$
$\Omega_\Lambda$	0.6901	$0.690 \pm 0.013$	$100\theta_*$	1.041184	$1.04119 \pm 0.00047$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.92$ ;  $\Delta\chi_{\text{eff}}^2 = -0.91$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.88$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.00688$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.98 ( $\Delta$  -1.34) plik\_dx11dr2\_HM\_v18\_TT: 764.12 ( $\Delta$  0.45) Hubble - H070p6: 0.75 ( $\Delta$  -0.08)

## 17.6 base\_nrun\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022322	$0.02230 \pm 0.00022$	$\Omega_m h^3$	0.096020	$0.09597 \pm 0.00050$	$100\theta_D$	0.160906	$0.16093 \pm 0.00028$
$\Omega_c h^2$	0.11829	$0.1183 \pm 0.0012$	$\sigma_8$	0.8169	$0.8160 \pm 0.0088$	$z_{\text{eq}}$	3360.1	$3360 \pm 28$
$100\theta_{\text{MC}}$	1.041097	$1.04107 \pm 0.00040$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.4513 \pm 0.0066$	$k_{\text{eq}}$	0.010255	$0.010254 \pm 0.000085$
$\tau$	0.0701	$0.069 \pm 0.013$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.6068 \pm 0.0069$	$100\theta_{\text{eq}}$	0.8209	$0.8209 \pm 0.0052$
$\ln(10^{10} A_s)$	3.0703	$3.069 \pm 0.024$	$\sigma_8/h^{0.5}$	0.9909	$0.990 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.45339	$0.4534 \pm 0.0027$
$n_s$	0.96863	$0.9677^{+0.0044}_{-0.0050}$	$\langle d^2 \rangle^{1/2}$	2.4465	$2.446 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.071914	$0.07191 \pm 0.00041$
$dn_s/d \ln k$	-0.0026	$-0.0033 \pm 0.0073$	$z_{\text{re}}$	9.20	$9.1 \pm 1.2$	$H(0.57)$	93.150	$93.13^{+0.26}_{-0.32}$
$y_{\text{cal}}$	0.99999	$1.0002 \pm 0.0025$	$10^9 A_s$	2.155	$2.152 \pm 0.052$	$D_A(0.57)$	1382.8	$1383.2^{+8.2}_{-7.3}$
$A_{217}^{\text{CIB}}$	67.8	$65.0 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8732	$1.874 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.67455	$0.6746 \pm 0.0018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1217.9	$1219^{+18}_{-21}$	$f\sigma_8(0.57)$	0.4735	$0.4730 \pm 0.0051$
$A_{143}^{\text{tSZ}}$	7.18	$4.8 \pm 2.0$	$D_{220}$	5714.7	$5719 \pm 40$	$\sigma_8(0.57)$	0.6092	$0.6084 \pm 0.0071$
$A_{100}^{\text{PS}}$	255.4	$264 \pm 28$	$D_{810}$	2532.4	$2533 \pm 14$	$f_{2000}^{143}$	30.34	$31.1 \pm 3.1$
$A_{143}^{\text{PS}}$	39.9	$45 \pm 8$	$D_{1420}$	814.5	$814.1 \pm 5.2$	$f_{2000}^{143 \times 217}$	32.83	$33.3 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	33.0	$38^{+10}_{-10}$	$D_{2000}$	230.04	$229.7 \pm 1.9$	$f_{2000}^{217}$	106.26	$106.7 \pm 2.1$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$n_{s,0.002}$	0.9770	$0.978 \pm 0.023$	$\chi_{\text{lensing}}^2$	9.44	$10.1 \pm 1.7$
$A^{\text{kSZ}}$	0.02	$< 5.42$	$Y_{\text{P}}$	0.245372	$0.24536 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10494.15	$10494.9 \pm 2.2$
$A_{100}^{\text{dustTT}}$	7.51	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246698	$0.24669 \pm 0.00010$	$\chi_{\text{plik}}^2$	766.7	$780.3 \pm 5.7$
$A_{143}^{\text{dustTT}}$	9.21	$9.1 \pm 1.8$	$10^5 D/H$	2.6004	$2.604 \pm 0.042$	$\chi_{\text{H070p6}}^2$	0.625	$0.66 \pm 0.26$
$A_{143 \times 217}^{\text{dustTT}}$	17.85	$17.2 \pm 4.2$	$\text{Age/Gyr}$	13.7898	$13.792 \pm 0.031$	$\chi_{\text{JLA}}^2$	706.607	$706.65 \pm 0.16$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$z_*$	1089.830	$1089.86 \pm 0.32$	$\chi_{6\text{DF}}^2$	0.0009	$0.038 \pm 0.054$
$c_{100}$	0.99790	$0.99791 \pm 0.00076$	$r_*$	144.912	$144.93 \pm 0.32$	$\chi_{\text{MGS}}^2$	1.61	$1.67 \pm 0.57$
$c_{217}$	0.99600	$0.9960^{+0.0014}_{-0.0017}$	$100\theta_*$	1.041284	$1.04127 \pm 0.00040$	$\chi_{\text{DR11CMass}}^2$	2.437	$2.84 \pm 0.62$
$H_0$	67.98	$67.96 \pm 0.56$	$D_A/\text{Gpc}$	13.9167	$13.918 \pm 0.031$	$\chi_{\text{DR11LOWZ}}^2$	0.320	$0.45 \pm 0.44$
$\Omega_\Lambda$	0.6943	$0.6941 \pm 0.0072$	$z_{\text{drag}}$	1059.704	$1059.65 \pm 0.50$	$\chi_{\text{prior}}^2$	2.12	$7.3 \pm 3.6$
$\Omega_m$	0.3057	$0.3059 \pm 0.0072$	$r_{\text{drag}}$	147.599	$147.62 \pm 0.35$	$\chi_{\text{CMB}}^2$	11270.2	$11285.3 \pm 5.5$
$\Omega_m h^2$	0.14125	$0.1412 \pm 0.0012$	$k_D$	0.140295	$0.14025 \pm 0.00047$	$\chi_{\text{BAO}}^2$	4.37	$5.00 \pm 0.94$

Best-fit  $\chi_{\text{eff}}^2 = 11983.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.11$ ;  $\bar{\chi}_{\text{eff}}^2 = 12004.87$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.85$ ;  $R - 1 = 0.03030$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.44 ( $\Delta$  0.17) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.15 ( $\Delta$  -0.76) plik\_dx11dr2\_HM\_v18\_TT: 766.65 ( $\Delta$  0.52) Hubble - H070p6: 0.62 ( $\Delta$  -0.04) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

## 17.7 base\_nrun\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02236 \pm 0.00027$	$\Omega_m$	$0.313^{+0.013}_{-0.015}$	$D_A/\text{Gpc}$	$13.884 \pm 0.047$
$\Omega_c h^2$	$0.1196 \pm 0.0022$	$\Omega_m h^2$	$0.1426 \pm 0.0021$	$z_{\text{drag}}$	$1059.89 \pm 0.56$
$100\theta_{\text{MC}}$	$1.04093 \pm 0.00048$	$\Omega_m h^3$	$0.09624 \pm 0.00053$	$r_{\text{drag}}$	$147.21 \pm 0.51$
$\tau$	$0.089^{+0.020}_{-0.025}$	$\sigma_8$	$0.836^{+0.015}_{-0.017}$	$k_D$	$0.14073 \pm 0.00057$
$\ln(10^{10} A_s)$	$3.113^{+0.039}_{-0.047}$	$\sigma_8 \Omega_m^{0.5}$	$0.468 \pm 0.014$	$100\theta_D$	$0.16079 \pm 0.00032$
$n_s$	$0.9652 \pm 0.0065$	$\sigma_8 \Omega_m^{0.25}$	$0.626 \pm 0.014$	$z_{\text{eq}}$	$3392 \pm 51$
$dn_s/d \ln k$	$-0.0085 \pm 0.0081$	$\sigma_8/h^{0.5}$	$1.018 \pm 0.020$	$k_{\text{eq}}$	$0.01035 \pm 0.00015$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.506 \pm 0.046$	$100\theta_{\text{eq}}$	$0.8153 \pm 0.0096$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.7$	$z_{\text{re}}$	$10.8 \pm 1.8$	$100\theta_{\text{s,eq}}$	$0.4504 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.251^{+0.084}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	$0.07150 \pm 0.00076$
$A_{143}^{\text{tSZ}}$	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	$1.883 \pm 0.014$	$H(0.57)$	$93.02 \pm 0.45$
$A_{100}^{\text{PS}}$	$261 \pm 28$	$D_{40}$	$1222 \pm 21$	$D_A(0.57)$	$1389 \pm 14$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$D_{220}$	$5721 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6764 \pm 0.0035$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{810}$	$2536 \pm 14$	$f\sigma_8(0.57)$	$0.4866 \pm 0.0098$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{1420}$	$813.4 \pm 5.2$	$\sigma_8(0.57)$	$0.622^{+0.011}_{-0.014}$
$A^{\text{kSZ}}$	$< 5.11$	$D_{2000}$	$229.8 \pm 2.0$	$f_{2000}^{143}$	$30.9 \pm 3.2$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	$0.993 \pm 0.027$	$f_{2000}^{143 \times 217}$	$33.1 \pm 2.3$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$Y_{\text{P}}$	$0.24539 \pm 0.00012$	$f_{2000}^{217}$	$106.6 \pm 2.1$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.24671 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	$10496.2 \pm 2.8$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.5$	$10^5 \text{D/H}$	$2.593 \pm 0.051$	$\chi_{\text{plik}}^2$	$778.5 \pm 6.0$
$c_{100}$	$0.99791 \pm 0.00077$	$\text{Age/Gyr}$	$13.795 \pm 0.042$	$\chi_{\text{prior}}^2$	$7.3 \pm 3.5$
$c_{217}$	$0.9960 \pm 0.0014$	$z_*$	$1089.89 \pm 0.47$	$\chi_{\text{CMB}}^2$	$11274.7 \pm 5.7$
$H_0$	$67.5 \pm 1.0$	$r_*$	$144.55 \pm 0.51$		
$\Omega_\Lambda$	$0.687^{+0.015}_{-0.013}$	$100\theta_*$	$1.04112 \pm 0.00047$		

$$\bar{\chi}_{\text{eff}}^2 = 11281.97; \Delta\bar{\chi}_{\text{eff}}^2 = 0.33; R - 1 = 0.00630$$

## 17.8 base\_nrun\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022291	$0.02229 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.084$	Age/Gyr	13.8091	$13.809 \pm 0.027$
$\Omega_c h^2$	0.11982	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$z_*$	1090.004	$1090.00 \pm 0.31$
$100\theta_{\text{MC}}$	1.040765	$1.04078 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$r_*$	144.538	$144.53 \pm 0.33$
$\tau$	0.0844	$0.083 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.672	$1.67 \pm 0.25$	$100\theta_*$	1.040962	$1.04097 \pm 0.00032$
$\ln(10^{10} A_s)$	3.1046	$3.103 \pm 0.036$	$c_{100}$	0.99821	$0.99818 \pm 0.00077$	$D_A/\text{Gpc}$	13.8850	$13.885 \pm 0.030$
$n_s$	0.96416	$0.9639 \pm 0.0050$	$c_{217}$	0.99600	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.742	$1059.74 \pm 0.34$
$dn_s/d \ln k$	-0.0051	$-0.0057 \pm 0.0071$	$H_0$	67.30	$67.31 \pm 0.66$	$r_{\text{drag}}$	147.227	$147.22 \pm 0.32$
$y_{\text{cal}}$	1.00015	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6848	$0.6847 \pm 0.0092$	$k_D$	0.140664	$0.14067 \pm 0.00035$
$A_{217}^{\text{CIB}}$	67.4	$64.5 \pm 6.7$	$\Omega_m$	0.3152	$0.3153 \pm 0.0092$	$100\theta_D$	0.160849	$0.16085 \pm 0.00020$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^2$	0.14276	$0.1428 \pm 0.0014$	$z_{\text{eq}}$	3396.0	$3396 \pm 33$
$A_{143}^{\text{tSZ}}$	7.18	$5.1 \pm 1.9$	$\Omega_m h^3$	0.096078	$0.09609 \pm 0.00031$	$k_{\text{eq}}$	0.010365	$0.01037 \pm 0.00010$
$A_{100}^{\text{PS}}$	258.4	$263 \pm 28$	$\sigma_8$	0.8343	$0.834 \pm 0.014$	$100\theta_{\text{eq}}$	0.8141	$0.8141 \pm 0.0063$
$A_{143}^{\text{PS}}$	40.5	$45 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4684	$0.4680 \pm 0.0098$	$100\theta_{\text{s,eq}}$	0.44984	$0.4498 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	34.9	$40_{-10}^{+10}$	$\sigma_8 \Omega_m^{0.25}$	0.6251	$0.625 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07136	$0.07137 \pm 0.00050$
$A_{217}^{\text{PS}}$	97.9	$97 \pm 10$	$\sigma_8/h^{0.5}$	1.0169	$1.016 \pm 0.017$	$H(0.57)$	92.891	$92.90 \pm 0.29$
$A^{\text{kSZ}}$	0.00	$< 4.59$	$\langle d^2 \rangle^{1/2}$	2.5088	$2.507 \pm 0.040$	$D_A(0.57)$	1391.6	$1391.5 \pm 8.9$
$A_{100}^{\text{dust}TT}$	7.41	$7.5 \pm 1.8$	$z_{\text{re}}$	10.55	$10.4_{-1.5}^{+1.7}$	$F_{\text{AP}}(0.57)$	0.67696	$0.6770 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	8.96	$8.9 \pm 1.8$	$10^9 A_s$	2.230	$2.228_{-0.086}^{+0.077}$	$f\sigma_8(0.57)$	0.4860	$0.4855 \pm 0.0082$
$A_{143 \times 217}^{\text{dust}TT}$	17.38	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8837	$1.885 \pm 0.013$	$\sigma_8(0.57)$	0.6197	$0.619 \pm 0.011$
$A_{217}^{\text{dust}TT}$	81.5	$81.5 \pm 7.5$	$D_{40}$	1230.0	$1230 \pm 19$	$f_{2000}^{143}$	30.03	$30.5 \pm 3.0$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0817 \pm 0.0057$	$D_{220}$	5724.2	$5727 \pm 39$	$f_{2000}^{143 \times 217}$	32.72	$32.9 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0493 \pm 0.0050$	$D_{810}$	2536.1	$2537 \pm 14$	$f_{2000}^{217}$	106.23	$106.4 \pm 2.1$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.099 \pm 0.033$	$D_{1420}$	813.55	$813.6 \pm 5.0$	$\chi_{\text{lowTEB}}^2$	10495.74	$10496.5 \pm 2.7$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1006 \pm 0.0069$	$D_{2000}$	229.87	$229.8 \pm 1.8$	$\chi_{\text{plik}}^2$	2432.3	$2452.1 \pm 7.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9806	$0.982 \pm 0.022$	$\chi_{\text{prior}}^2$	7.1	$19.4 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$Y_P$	0.245358	$0.245357 \pm 0.000076$	$\chi_{\text{CMB}}^2$	12928.0	$12948.6 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1415	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246685	$0.246684 \pm 0.000076$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6062	$2.606 \pm 0.032$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.12$ ;  $\Delta\chi_{\text{eff}}^2 = -0.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00882$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.74 ( $\Delta$  -1.19) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.30 ( $\Delta$  0.66)

## 17.9 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022330	$0.02233 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$r_*$	144.659	$144.66 \pm 0.25$
$\Omega_c h^2$	0.11924	$0.1192 \pm 0.0011$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.080$	$100\theta_*$	1.041030	$1.04104 \pm 0.00030$
$100\theta_{\text{MC}}$	1.040848	$1.04085 \pm 0.00030$	$A_{217}^{\text{dust}TE}$	1.668	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.8957	$13.895 \pm 0.024$
$\tau$	0.0872	$0.087 \pm 0.018$	$c_{100}$	0.99819	$0.99817 \pm 0.00078$	$z_{\text{drag}}$	1059.780	$1059.80 \pm 0.32$
$\ln(10^{10} A_s)$	3.1089	$3.108 \pm 0.035$	$c_{217}$	0.99603	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.338	$147.33 \pm 0.26$
$n_s$	0.96582	$0.9654 \pm 0.0042$	$H_0$	67.561	$67.57 \pm 0.48$	$k_D$	0.140576	$0.14058 \pm 0.00032$
$dn_s/d \ln k$	-0.0048	$-0.0057 \pm 0.0071$	$\Omega_\Lambda$	0.6884	$0.6884 \pm 0.0065$	$100\theta_D$	0.160826	$0.16082 \pm 0.00019$
$y_{\text{cal}}$	1.00024	$1.0004 \pm 0.0025$	$\Omega_m$	0.3116	$0.3116 \pm 0.0065$	$z_{\text{eq}}$	3383.1	$3383 \pm 24$
$A_{217}^{\text{CIB}}$	67.2	$64.4 \pm 6.7$	$\Omega_m h^2$	0.14221	$0.1422 \pm 0.0010$	$k_{\text{eq}}$	0.010325	$0.010326 \pm 0.000074$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.06	—	$\Omega_m h^3$	0.096081	$0.09609 \pm 0.00031$	$100\theta_{\text{eq}}$	0.81656	$0.8166 \pm 0.0046$
$A_{143}^{\text{tSZ}}$	7.12	$5.2^{+2.1}_{-1.9}$	$\sigma_8$	0.8346	$0.834 \pm 0.014$	$100\theta_{s,\text{eq}}$	0.45111	$0.4511 \pm 0.0024$
$A_{100}^{\text{PS}}$	257.8	$262 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4658	$0.4654 \pm 0.0089$	$r_{\text{drag}}/D_V(0.57)$	0.071561	$0.07157 \pm 0.00036$
$A_{143}^{\text{PS}}$	40.2	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6235	$0.623 \pm 0.011$	$H(0.57)$	92.995	$93.00 \pm 0.22$
$A_{143 \times 217}^{\text{PS}}$	34.7	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0153	$1.014 \pm 0.017$	$D_A(0.57)$	1388.2	$1388.0 \pm 6.5$
$A_{217}^{\text{PS}}$	97.7	$97 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5051	$2.503 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67605	$0.6760 \pm 0.0017$
$A^{\text{kSZ}}$	0.00	$< 4.49$	$z_{\text{re}}$	10.77	$10.7^{+1.7}_{-1.5}$	$f\sigma_8(0.57)$	0.4852	$0.4848 \pm 0.0081$
$A_{100}^{\text{dust}TT}$	7.38	$7.4 \pm 1.8$	$10^9 A_s$	2.240	$2.239^{+0.076}_{-0.085}$	$\sigma_8(0.57)$	0.6208	$0.620 \pm 0.011$
$A_{143}^{\text{dust}TT}$	8.94	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8812	$1.882 \pm 0.012$	$f_{2000}^{143}$	29.80	$30.2 \pm 3.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.54	$17.0 \pm 4.2$	$D_{40}$	1228.3	$1228 \pm 19$	$f_{2000}^{143 \times 217}$	32.52	$32.7 \pm 2.1$
$A_{217}^{\text{dust}TT}$	81.8	$81.5 \pm 7.5$	$D_{220}$	5725.7	$5728 \pm 38$	$f_{2000}^{217}$	106.07	$106.3 \pm 2.0$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0819 \pm 0.0056$	$D_{810}$	2535.7	$2536 \pm 14$	$\chi_{\text{lowTEB}}^2$	10495.85	$10496.5 \pm 2.8$
$A_{100 \times 143}^{\text{dust}EE}$	0.0493	$0.0495 \pm 0.0051$	$D_{1420}$	814.0	$813.8 \pm 5.0$	$\chi_{\text{plik}}^2$	2432.3	$2451.7 \pm 7.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.033$	$D_{2000}$	230.13	$230.0 \pm 1.8$	$\chi_{6\text{DF}}^2$	0.0373	$0.065 \pm 0.076$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1009 \pm 0.0069$	$n_{s,0.002}$	0.9813	$0.984 \pm 0.022$	$\chi_{\text{MGS}}^2$	1.156	$1.23 \pm 0.45$
$A_{143 \times 217}^{\text{dust}EE}$	0.2233	$0.224 \pm 0.047$	$Y_P$	0.245375	$0.245376 \pm 0.000067$	$\chi_{\text{DR11CMass}}^2$	2.547	$2.87 \pm 0.62$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246701	$0.246703 \pm 0.000068$	$\chi_{\text{DR11LOWZ}}^2$	0.75	$0.84 \pm 0.56$
$A_{100}^{\text{dust}TE}$	0.1402	$0.141 \pm 0.038$	$10^5 D/H$	2.5989	$2.598 \pm 0.028$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1310	$0.131 \pm 0.029$	Age/Gyr	13.8007	$13.800 \pm 0.022$	$\chi_{\text{CMB}}^2$	12928.2	$12948.2 \pm 6.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$z_*$	1089.904	$1089.90 \pm 0.24$	$\chi_{\text{BAO}}^2$	4.49	$5.00 \pm 0.90$

Best-fit  $\chi_{\text{eff}}^2 = 12939.75$ ;  $\Delta\chi_{\text{eff}}^2 = -0.41$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.72$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.24$ ;  $R - 1 = 0.01477$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMass: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10495.84 ( $\Delta$  -1.57) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.33 ( $\Delta$  0.80)

# 17.10 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022307	$0.02231 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	Age/Gyr	13.8059	$13.805 \pm 0.026$
$\Omega_c h^2$	0.11960	$0.1196 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$z_*$	1089.966	$1089.96 \pm 0.30$
$100\theta_{\text{MC}}$	1.040799	$1.04081 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.337 \pm 0.080$	$r_*$	144.582	$144.58 \pm 0.32$
$\tau$	0.0854	$0.085 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.658	$1.66 \pm 0.25$	$100\theta_*$	1.040984	$1.04100 \pm 0.00032$
$\ln(10^{10} A_s)$	3.1062	$3.105 \pm 0.036$	$c_{100}$	0.99820	$0.99817 \pm 0.00077$	$D_A/\text{Gpc}$	13.8890	$13.889 \pm 0.029$
$n_s$	0.96474	$0.9645 \pm 0.0049$	$c_{217}$	0.99604	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.780	$1059.77 \pm 0.33$
$dn_s/d \ln k$	-0.0049	$-0.0058 \pm 0.0071$	$H_0$	67.40	$67.41 \pm 0.64$	$r_{\text{drag}}$	147.266	$147.26 \pm 0.31$
$y_{\text{cal}}$	1.00027	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6862	$0.6861 \pm 0.0088$	$k_D$	0.140635	$0.14064 \pm 0.00034$
$A_{217}^{\text{CIB}}$	67.8	$64.5 \pm 6.7$	$\Omega_m$	0.3138	$0.3139 \pm 0.0088$	$100\theta_D$	0.160837	$0.16084 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\Omega_m h^2$	0.14255	$0.1426 \pm 0.0013$	$z_{\text{eq}}$	3391.1	$3391 \pm 32$
$A_{143}^{\text{tSZ}}$	7.24	$5.2 \pm 1.9$	$\Omega_m h^3$	0.096080	$0.09609 \pm 0.00031$	$k_{\text{eq}}$	0.010350	$0.010351 \pm 0.000098$
$A_{100}^{\text{PS}}$	258.2	$263 \pm 28$	$\sigma_8$	0.8344	$0.834 \pm 0.014$	$100\theta_{\text{eq}}$	0.8150	$0.8150 \pm 0.0061$
$A_{143}^{\text{PS}}$	39.3	$45 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4674	$0.4670 \pm 0.0097$	$100\theta_{\text{s,eq}}$	0.45032	$0.4503 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	33.2	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.071436	$0.07144 \pm 0.00048$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$\sigma_8/h^{0.5}$	1.0163	$1.015 \pm 0.017$	$H(0.57)$	92.930	$92.94 \pm 0.28$
$A^{\text{kSZ}}$	0.01	$< 4.54$	$\langle d^2 \rangle^{1/2}$	2.5077	$2.505 \pm 0.040$	$D_A(0.57)$	1390.3	$1390.2 \pm 8.6$
$A_{100}^{\text{dust}TT}$	7.44	$7.4 \pm 1.9$	$z_{\text{re}}$	10.63	$10.5^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67661	$0.6766 \pm 0.0022$
$A_{143}^{\text{dust}TT}$	8.95	$8.9 \pm 1.8$	$10^9 A_s$	2.234	$2.233^{+0.077}_{-0.087}$	$f\sigma_8(0.57)$	0.4857	$0.4853 \pm 0.0082$
$A_{143 \times 217}^{\text{dust}TT}$	17.43	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8828	$1.884 \pm 0.012$	$\sigma_8(0.57)$	0.6201	$0.620 \pm 0.011$
$A_{217}^{\text{dust}TT}$	81.5	$81.5 \pm 7.5$	$D_{40}$	1229.8	$1229 \pm 19$	$f_{2000}^{143}$	29.92	$30.4 \pm 3.0$
$A_{100}^{\text{dust}EE}$	0.0819	$0.0818 \pm 0.0056$	$D_{220}$	5725.8	$5727 \pm 38$	$f_{2000}^{143 \times 217}$	32.62	$32.8 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0495	$0.0494 \pm 0.0051$	$D_{810}$	2536.1	$2537 \pm 14$	$f_{2000}^{217}$	106.18	$106.3 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.099 \pm 0.033$	$D_{1420}$	813.81	$813.7 \pm 5.0$	$\chi_{\text{lowTEB}}^2$	10495.80	$10496.5 \pm 2.7$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1007 \pm 0.0070$	$D_{2000}$	229.99	$229.9 \pm 1.8$	$\chi_{\text{plik}}^2$	2432.1	$2452.0 \pm 7.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2240	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9806	$0.983 \pm 0.022$	$\chi_{\text{JLA}}^2$	706.820	$706.89 \pm 0.31$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.245365	$0.245365 \pm 0.000074$	$\chi_{\text{prior}}^2$	7.2	$19.5 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1420	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246692	$0.246692 \pm 0.000074$	$\chi_{\text{CMB}}^2$	12927.9	$12948.6 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6032	$2.603 \pm 0.031$			

Best-fit  $\chi_{\text{eff}}^2 = 13641.96$ ;  $\Delta\chi_{\text{eff}}^2 = -0.44$ ;  $\bar{\chi}_{\text{eff}}^2 = 13674.92$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.29$ ;  $R - 1 = 0.01157$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.80 ( $\Delta$  -1.56) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.12 ( $\Delta$  0.51) SN - JLA December\_2013: 706.82 ( $\Delta$  -0.04)

### 17.11 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022269	$0.02228 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.307 \pm 0.082$	Age/Gyr	13.8062	$13.805 \pm 0.027$
$\Omega_c h^2$	0.11926	$0.1192 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$z_*$	1089.984	$1089.97 \pm 0.30$
$100\theta_{\text{MC}}$	1.040864	$1.04088 \pm 0.00031$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.081$	$r_*$	144.700	$144.70^{+0.33}_{-0.30}$
$\tau$	0.0632	$0.063 \pm 0.014$	$A_{217}^{\text{dust}TE}$	1.664	$1.66^{+0.25}_{-0.28}$	$100\theta_*$	1.041059	$1.04108 \pm 0.00031$
$\ln(10^{10} A_s)$	3.0593	$3.060 \pm 0.026$	$c_{100}$	0.99815	$0.99814 \pm 0.00077$	$D_A/\text{Gpc}$	13.8993	$13.899^{+0.031}_{-0.027}$
$n_s$	0.96571	$0.9653 \pm 0.0049$	$c_{217}$	0.99604	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.666	$1059.66 \pm 0.33$
$dn_s/d \ln k$	-0.0007	$-0.0020 \pm 0.0067$	$H_0$	67.51	$67.54 \pm 0.65$	$r_{\text{drag}}$	147.398	$147.40^{+0.33}_{-0.29}$
$y_{\text{cal}}$	1.00000	$1.0000^{+0.0024}_{-0.0027}$	$\Omega_\Lambda$	0.6881	$0.6882 \pm 0.0089$	$k_D$	0.140465	$0.14047 \pm 0.00033$
$A_{217}^{\text{CIB}}$	67.7	$64.8 \pm 6.7$	$\Omega_m$	0.3119	$0.3118 \pm 0.0089$	$100\theta_D$	0.160912	$0.16091 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\Omega_m h^2$	0.14217	$0.1422 \pm 0.0013$	$z_{\text{eq}}$	3382.1	$3382 \pm 32$
$A_{143}^{\text{tSZ}}$	7.30	$5.1^{+2.2}_{-1.8}$	$\Omega_m h^3$	0.095984	$0.09600 \pm 0.00030$	$k_{\text{eq}}$	0.010323	$0.010321 \pm 0.000098$
$A_{100}^{\text{PS}}$	257.9	$263 \pm 28$	$\sigma_8$	0.8153	$0.8149 \pm 0.0089$	$100\theta_{\text{eq}}$	0.8166	$0.8168 \pm 0.0061$
$A_{143}^{\text{PS}}$	39.5	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4553	$0.4550 \pm 0.0071$	$100\theta_{\text{s,eq}}$	0.45117	$0.4513 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6093	$0.6089 \pm 0.0069$	$r_{\text{drag}}/D_V(0.57)$	0.071552	$0.07157 \pm 0.00049$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9922	$0.992 \pm 0.011$	$H(0.57)$	92.953	$92.97 \pm 0.29$
$A^{\text{kSZ}}$	0.00	$< 4.98$	$\langle d^2 \rangle^{1/2}$	2.4538	$2.452 \pm 0.027$	$D_A(0.57)$	1389.0	$1388.6 \pm 8.8$
$A_{100}^{\text{dust}TT}$	7.47	$7.5 \pm 1.9$	$z_{\text{re}}$	8.58	$8.5^{+1.4}_{-1.2}$	$F_{\text{AP}}(0.57)$	0.67614	$0.6761 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	9.09	$9.0 \pm 1.8$	$10^9 A_s$	2.131	$2.133 \pm 0.055$	$f\sigma_8(0.57)$	0.4741	$0.4738 \pm 0.0051$
$A_{143 \times 217}^{\text{dust}TT}$	17.69	$17.2^{+4.4}_{-3.9}$	$10^9 A_s e^{-2\tau}$	1.8780	$1.878 \pm 0.012$	$\sigma_8(0.57)$	0.6064	$0.6062 \pm 0.0074$
$A_{217}^{\text{dust}TT}$	81.8	$81.7 \pm 7.4$	$D_{40}$	1228.1	$1227 \pm 19$	$f_{2000}^{143}$	30.00	$30.4 \pm 3.0$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0815 \pm 0.0055$	$D_{220}$	5721.6	$5723 \pm 39$	$f_{2000}^{143 \times 217}$	32.71	$32.9^{+2.1}_{-2.3}$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0491^{+0.0056}_{-0.0049}$	$D_{810}$	2534.0	$2534 \pm 14$	$f_{2000}^{217}$	106.16	$106.3 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0985	$0.100 \pm 0.033$	$D_{1420}$	814.6	$814.2 \pm 5.1$	$\chi_{\text{lensing}}^2$	9.86	$10.6 \pm 2.0$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1005 \pm 0.0069$	$D_{2000}$	230.00	$229.8 \pm 1.8$	$\chi_{\text{lowTEB}}^2$	10495.06	$10495.6 \pm 2.3$
$A_{143 \times 217}^{\text{dust}EE}$	0.2261	$0.224 \pm 0.046$	$n_{s,0.002}$	0.9681	$0.972 \pm 0.021$	$\chi_{\text{plik}}^2$	2435.1	$2454.4 \pm 7.0$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$Y_P$	0.245348	$0.245350 \pm 0.000075$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1396	$0.141 \pm 0.039$	$Y_P^{\text{BBN}}$	0.246675	$0.246676 \pm 0.000075$	$\chi_{\text{CMB}}^2$	12940.0	$12960.6 \pm 6.9$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.6104	$2.609 \pm 0.031$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.16$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.94$ ;  $R - 1 = 0.03377$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.86 ( $\Delta$  0.09) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.06 ( $\Delta$  -0.23) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.13 ( $\Delta$  0.22)



## 17.12 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022322	$0.02232 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.084$	Age/Gyr	13.8038	$13.804 \pm 0.026$
$\Omega_c h^2$	0.11953	$0.1196 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.054$	$z_*$	1089.941	$1089.95 \pm 0.30$
$100\theta_{\text{MC}}$	1.040802	$1.04082 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.080$	$r_*$	144.589	$144.59 \pm 0.32$
$\tau$	0.0863	$0.085 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.658	$1.66 \pm 0.25$	$100\theta_*$	1.040995	$1.04101 \pm 0.00032$
$\ln(10^{10} A_s)$	3.1078	$3.106 \pm 0.036$	$c_{100}$	0.99820	$0.99817 \pm 0.00077$	$D_A/\text{Gpc}$	13.8895	$13.889 \pm 0.030$
$n_s$	0.96491	$0.9646 \pm 0.0050$	$c_{217}$	0.99607	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.780	$1059.78 \pm 0.33$
$dn_s/d \ln k$	-0.0053	$-0.0058 \pm 0.0071$	$H_0$	67.44	$67.43 \pm 0.65$	$r_{\text{drag}}$	147.269	$147.27 \pm 0.32$
$y_{\text{cal}}$	1.00021	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.6867	$0.6864 \pm 0.0090$	$k_D$	0.140644	$0.14064 \pm 0.00034$
$A_{217}^{\text{CIB}}$	67.7	$64.5 \pm 6.7$	$\Omega_m$	0.3133	$0.3136 \pm 0.0090$	$100\theta_D$	0.160822	$0.16083 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$\Omega_m h^2$	0.14250	$0.1425 \pm 0.0014$	$z_{\text{eq}}$	3389.9	$3390 \pm 33$
$A_{143}^{\text{tSZ}}$	7.12	$5.2 \pm 1.9$	$\Omega_m h^3$	0.096101	$0.09610 \pm 0.00031$	$k_{\text{eq}}$	0.010346	$0.01035 \pm 0.00010$
$A_{100}^{\text{PS}}$	258.5	$263 \pm 28$	$\sigma_8$	0.8347	$0.834 \pm 0.014$	$100\theta_{\text{eq}}$	0.8153	$0.8152 \pm 0.0062$
$A_{143}^{\text{PS}}$	40.0	$45 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4672	$0.4669 \pm 0.0098$	$100\theta_{s,\text{eq}}$	0.45045	$0.4504 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	34.0	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.071462	$0.07146 \pm 0.00049$
$A_{217}^{\text{PS}}$	97.3	$97 \pm 10$	$\sigma_8/h^{0.5}$	1.0164	$1.015 \pm 0.017$	$H(0.57)$	92.951	$92.95 \pm 0.28$
$A^{\text{kSZ}}$	0.00	$< 4.53$	$\langle d^2 \rangle^{1/2}$	2.5075	$2.505 \pm 0.040$	$D_A(0.57)$	1389.7	$1389.9 \pm 8.8$
$A_{100}^{\text{dust}TT}$	7.44	$7.4 \pm 1.9$	$z_{\text{re}}$	10.70	$10.5^{+1.7}_{-1.5}$	$F_{\text{AP}}(0.57)$	0.67649	$0.6765 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	8.93	$8.9 \pm 1.8$	$10^9 A_s$	2.237	$2.234^{+0.077}_{-0.087}$	$f\sigma_8(0.57)$	0.4858	$0.4853 \pm 0.0082$
$A_{143 \times 217}^{\text{dust}TT}$	17.45	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8825	$1.883 \pm 0.013$	$\sigma_8(0.57)$	0.6205	$0.620 \pm 0.011$
$A_{217}^{\text{dust}TT}$	81.6	$81.5 \pm 7.5$	$D_{40}$	1228.6	$1229 \pm 19$	$f_{2000}^{143}$	29.96	$30.4 \pm 3.0$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0818 \pm 0.0056$	$D_{220}$	5725.6	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	32.68	$32.8 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0493	$0.0494 \pm 0.0051$	$D_{810}$	2535.9	$2537 \pm 14$	$f_{2000}^{217}$	106.21	$106.3 \pm 2.1$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.033$	$D_{1420}$	813.73	$813.7 \pm 5.0$	$\chi_{\text{lowTEB}}^2$	10495.74	$10496.5 \pm 2.8$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1008 \pm 0.0070$	$D_{2000}$	229.98	$229.9 \pm 1.8$	$\chi_{\text{plik}}^2$	2432.4	$2452.1 \pm 7.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2228	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9821	$0.983 \pm 0.022$	$\chi_{\text{H070p6}}^2$	0.901	$0.94 \pm 0.37$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$Y_P$	0.245371	$0.245368 \pm 0.000075$	$\chi_{\text{prior}}^2$	7.0	$19.5 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1408	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246698	$0.246694 \pm 0.000075$	$\chi_{\text{CMB}}^2$	12928.1	$12948.6 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1325	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6005	$2.602 \pm 0.031$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.06$ ;  $\Delta\chi_{\text{eff}}^2 = -0.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.03$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.28$ ;  $R - 1 = 0.01164$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.74 ( $\Delta$  -1.27) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.38 ( $\Delta$  0.61) Hubble - H070p6: 0.90 ( $\Delta$  0.00)

17.13 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022327	$0.02232 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$D_A/\text{Gpc}$	13.9092	$13.908 \pm 0.023$
$\Omega_c h^2$	0.11866	$0.1187 \pm 0.0010$	$A_{217}^{\text{dust}TE}$	1.662	$1.66^{+0.24}_{-0.27}$	$z_{\text{drag}}$	1059.742	$1059.72 \pm 0.32$
$100\theta_{\text{MC}}$	1.040935	$1.04095 \pm 0.00029$	$c_{100}$	0.99817	$0.99814 \pm 0.00077$	$r_{\text{drag}}$	147.495	$147.49 \pm 0.25$
$\tau$	0.0662	$0.067 \pm 0.012$	$c_{217}$	0.99604	$0.9961^{+0.0016}_{-0.0014}$	$k_D$	0.140408	$0.14041 \pm 0.00030$
$\ln(10^{10} A_s)$	3.0640	$3.065 \pm 0.023$	$H_0$	67.794	$67.77 \pm 0.47$	$100\theta_D$	0.160863	$0.16088 \pm 0.00018$
$n_s$	0.96695	$0.9666 \pm 0.0041$	$\Omega_\Lambda$	0.6918	$0.6914 \pm 0.0062$	$z_{\text{eq}}$	3369.1	$3371 \pm 23$
$dn_s/d \ln k$	-0.0007	$-0.0021 \pm 0.0067$	$\Omega_m$	0.3082	$0.3086 \pm 0.0062$	$k_{\text{eq}}$	0.010283	$0.010287 \pm 0.000070$
$y_{\text{cal}}$	1.00005	$1.0001^{+0.0024}_{-0.0028}$	$\Omega_m h^2$	0.14163	$0.14169 \pm 0.00096$	$100\theta_{\text{eq}}$	0.81914	$0.8189 \pm 0.0044$
$A_{217}^{\text{CIB}}$	67.7	$64.5 \pm 6.7$	$\Omega_m h^3$	0.096017	$0.09602 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45246	$0.4523 \pm 0.0022$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8$	0.8153	$0.8156 \pm 0.0087$	$r_{\text{drag}}/D_V(0.57)$	0.071760	$0.07174 \pm 0.00035$
$A_{143}^{\text{tSZ}}$	7.35	$5.2^{+2.1}_{-1.8}$	$\sigma_8 \Omega_m^{0.5}$	0.4526	$0.4531 \pm 0.0061$	$H(0.57)$	93.074	$93.07 \pm 0.22$
$A_{100}^{\text{PS}}$	256.6	$263 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.6079 \pm 0.0067$	$D_A(0.57)$	1385.2	$1385.5 \pm 6.3$
$A_{143}^{\text{PS}}$	38.5	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9903	$0.991 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67518	$0.6753 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4507	$2.450 \pm 0.027$	$f\sigma_8(0.57)$	0.4732	$0.4734 \pm 0.0051$
$A_{217}^{\text{PS}}$	96.6	$96 \pm 10$	$z_{\text{re}}$	8.84	$8.8 \pm 1.2$	$\sigma_8(0.57)$	0.6074	$0.6075 \pm 0.0069$
$A^{\text{kSZ}}$	0.00	$< 4.88$	$10^9 A_s$	2.1414	$2.144 \pm 0.049$	$f_{2000}^{143}$	29.68	$30.2 \pm 2.9$
$A_{100}^{\text{dust}TT}$	7.55	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8757	$1.876 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.44	$32.7 \pm 2.1$
$A_{143}^{\text{dust}TT}$	9.05	$9.0 \pm 1.8$	$D_{40}$	1227.0	$1225 \pm 19$	$f_{2000}^{217}$	105.99	$106.2 \pm 2.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.58	$17.2^{+4.5}_{-3.8}$	$D_{220}$	5728.0	$5726 \pm 39$	$\chi^2_{\text{lensing}}$	9.60	$10.4 \pm 1.9$
$A_{217}^{\text{dust}TT}$	81.7	$81.7^{+8.1}_{-7.1}$	$D_{810}$	2533.8	$2534 \pm 14$	$\chi^2_{\text{lowTEB}}$	10494.96	$10495.3 \pm 2.1$
$A_{100}^{\text{dust}EE}$	0.0818	$0.0817 \pm 0.0055$	$D_{1420}$	815.0	$814.6 \pm 5.0$	$\chi^2_{\text{plik}}$	2435.5	$2454.4 \pm 7.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0493	$0.0494^{+0.0054}_{-0.0049}$	$D_{2000}$	230.21	$230.0 \pm 1.8$	$\chi^2_{\text{H070p6}}$	0.713	$0.74 \pm 0.24$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.100 \pm 0.033$	$n_{s,0.002}$	0.9692	$0.973 \pm 0.021$	$\chi^2_{\text{JLA}}$	706.660	$706.70 \pm 0.16$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1008 \pm 0.0068$	$Y_P$	0.245374	$0.245368 \pm 0.000066$	$\chi^2_{6\text{DF}}$	0.0102	$0.038 \pm 0.052$
$A_{143 \times 217}^{\text{dust}EE}$	0.2229	$0.224 \pm 0.046$	$Y_P^{\text{BBN}}$	0.246700	$0.246695 \pm 0.000066$	$\chi^2_{\text{MGS}}$	1.407	$1.44 \pm 0.46$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$10^5 D/H$	2.5995	$2.601 \pm 0.028$	$\chi^2_{\text{DR11CMass}}$	2.412	$2.71 \pm 0.43$
$A_{100}^{\text{dust}TE}$	0.1412	$0.141 \pm 0.039$	$\text{Age/Gyr}$	13.7959	$13.797 \pm 0.022$	$\chi^2_{\text{DR11LOWZ}}$	0.483	$0.59 \pm 0.45$
$A_{100 \times 143}^{\text{dust}TE}$	0.1315	$0.132 \pm 0.029$	$z_*$	1089.856	$1089.88 \pm 0.24$	$\chi^2_{\text{prior}}$	7.3	$19.6 \pm 5.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.309 \pm 0.082$	$r_*$	144.811	$144.80 \pm 0.24$	$\chi^2_{\text{CMB}}$	12940.0	$12960.1 \pm 6.8$
$A_{143}^{\text{dust}TE}$	0.154	$0.154 \pm 0.054$	$100\theta_*$	1.041120	$1.04114 \pm 0.00029$	$\chi^2_{\text{BAO}}$	4.313	$4.79 \pm 0.63$

Best-fit  $\chi^2_{\text{eff}} = 13659.02$ ;  $\Delta\chi^2_{\text{eff}} = -0.02$ ;  $\bar{\chi}^2_{\text{eff}} = 13691.95$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.84$ ;  $R - 1 = 0.05324$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.60 ( $\Delta$  -0.15) low1.SMW.70\_dx11d.2014.10.03

10494.96 ( $\Delta$  -0.26) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.46 ( $\Delta$  0.26) Hubble - H070p6: 0.71 ( $\Delta$  -0.01) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

#### 17.14 base\_nrun\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02230 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.084$	Age/Gyr	$13.808 \pm 0.027$
$\Omega_c h^2$	$0.1198 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.054$	$z_*$	$1090.00 \pm 0.30$
$100\theta_{\text{MC}}$	$1.04078 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	$0.338 \pm 0.080$	$r_*$	$144.54 \pm 0.32$
$\tau$	$0.084^{+0.017}_{-0.019}$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.25$	$100\theta_*$	$1.04097 \pm 0.00032$
$\ln(10^{10} A_s)$	$3.104^{+0.034}_{-0.038}$	$c_{100}$	$0.99817 \pm 0.00077$	$D_A/\text{Gpc}$	$13.885 \pm 0.030$
$n_s$	$0.9640 \pm 0.0050$	$c_{217}$	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	$1059.75 \pm 0.33$
$dn_s/d \ln k$	$-0.0058 \pm 0.0071$	$H_0$	$67.32 \pm 0.66$	$r_{\text{drag}}$	$147.23 \pm 0.32$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	$0.6849 \pm 0.0091$	$k_D$	$0.14067 \pm 0.00035$
$A_{217}^{\text{CIB}}$	$64.5 \pm 6.7$	$\Omega_m$	$0.3151 \pm 0.0091$	$100\theta_D$	$0.16085 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1428 \pm 0.0014$	$z_{\text{eq}}$	$3396 \pm 33$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 1.9$	$\Omega_m h^3$	$0.09609 \pm 0.00031$	$k_{\text{eq}}$	$0.01036 \pm 0.00010$
$A_{100}^{\text{PS}}$	$263 \pm 28$	$\sigma_8$	$0.834 \pm 0.013$	$100\theta_{\text{eq}}$	$0.8142 \pm 0.0063$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.4681 \pm 0.0098$	$100\theta_{s,\text{eq}}$	$0.4499 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.625 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	$0.07138 \pm 0.00050$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$\sigma_8/h^{0.5}$	$1.016 \pm 0.017$	$H(0.57)$	$92.90 \pm 0.28$
$A^{\text{kSZ}}$	$< 4.56$	$\langle d^2 \rangle^{1/2}$	$2.508 \pm 0.039$	$D_A(0.57)$	$1391.4 \pm 8.8$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$z_{\text{re}}$	$10.5 \pm 1.5$	$F_{\text{AP}}(0.57)$	$0.6769 \pm 0.0023$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$10^9 A_s$	$2.231^{+0.072}_{-0.088}$	$f\sigma_8(0.57)$	$0.4858 \pm 0.0079$
$A_{143 \times 217}^{\text{dust}TT}$	$17.0 \pm 4.2$	$10^9 A_s e^{-2\tau}$	$1.884 \pm 0.013$	$\sigma_8(0.57)$	$0.620^{+0.010}_{-0.011}$
$A_{217}^{\text{dust}TT}$	$81.5 \pm 7.5$	$D_{40}$	$1230 \pm 19$	$f_{2000}^{143}$	$30.5 \pm 3.0$
$A_{100}^{\text{dust}EE}$	$0.0817 \pm 0.0056$	$D_{220}$	$5727 \pm 38$	$f_{2000}^{143 \times 217}$	$32.9 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0493 \pm 0.0051$	$D_{810}$	$2537 \pm 14$	$f_{2000}^{217}$	$106.4 \pm 2.1$
$A_{100 \times 217}^{\text{dust}EE}$	$0.099 \pm 0.033$	$D_{1420}$	$813.5 \pm 5.0$	$\chi_{\text{lowTEB}}^2$	$10496.5 \pm 2.7$
$A_{143}^{\text{dust}EE}$	$0.1007 \pm 0.0070$	$D_{2000}$	$229.8 \pm 1.8$	$\chi_{\text{plik}}^2$	$2452.1 \pm 7.0$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.047$	$n_{s,0.002}$	$0.983 \pm 0.022$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.5$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.245359 \pm 0.000075$	$\chi_{\text{CMB}}^2$	$12948.5 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246685 \pm 0.000075$		
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	$2.606 \pm 0.031$		

$\bar{\chi}_{\text{eff}}^2 = 12968.00$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.32$ ;  $R - 1 = 0.01051$

17.15 base\_nrun\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022379	$0.02236 \pm 0.00025$	$\sigma_8$	0.8068	$0.809 \pm 0.020$	$100\theta_*$	1.041273	$1.04120 \pm 0.00050$
$\Omega_c h^2$	0.11827	$0.1182 \pm 0.0021$	$\sigma_8 \Omega_m^{0.5}$	0.4458	$0.447 \pm 0.016$	$D_A/\text{Gpc}$	13.9131	$13.918 \pm 0.047$
$100\theta_{\text{MC}}$	1.04108	$1.04101 \pm 0.00051$	$\sigma_8 \Omega_m^{0.25}$	0.5997	$0.601 \pm 0.017$	$z_{\text{drag}}$	1059.82	$1059.77 \pm 0.54$
$\tau$	0.0613	$0.063 \pm 0.022$	$\sigma_8/h^{0.5}$	0.9782	$0.981 \pm 0.026$	$r_{\text{drag}}$	147.54	$147.59 \pm 0.51$
$\ln(10^{10} A_s)$	3.0480	$3.053 \pm 0.047$	$\langle d^2 \rangle^{1/2}$	2.407	$2.415 \pm 0.057$	$k_D$	0.14040	$0.14033 \pm 0.00058$
$n_s$	0.9692	$0.970 \pm 0.014$	$z_{\text{re}}$	8.35	$8.4_{-2.0}^{+2.3}$	$100\theta_D$	0.160826	$0.16085 \pm 0.00031$
$dn_s/d \ln k$	-0.0074	$-0.007 \pm 0.013$	$10^9 A_s$	2.107	$2.121_{-0.11}^{+0.094}$	$z_{\text{eq}}$	3361.0	$3359 \pm 48$
$y_{\text{cal}}$	0.99967	$1.0001 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8642	$1.868 \pm 0.021$	$k_{\text{eq}}$	0.010258	$0.01025 \pm 0.00015$
$A_{100}^{\text{dustTE}}$	0.1413	$0.136 \pm 0.038$	$D_{40}$	1193.7	$1200 \pm 25$	$100\theta_{\text{eq}}$	0.8209	$0.8213 \pm 0.0092$
$A_{100 \times 143}^{\text{dustTE}}$	0.1311	$0.133 \pm 0.029$	$D_{220}$	5676	$5688 \pm 58$	$100\theta_{s,\text{eq}}$	0.45334	$0.4536 \pm 0.0047$
$A_{100 \times 217}^{\text{dustTE}}$	0.289	$0.303 \pm 0.085$	$D_{810}$	2521.0	$2526 \pm 26$	$r_{\text{drag}}/D_V(0.57)$	0.07193	$0.07194 \pm 0.00072$
$A_{143}^{\text{dustTE}}$	0.145	$0.152 \pm 0.054$	$D_{1420}$	810.5	$812 \pm 14$	$H(0.57)$	93.194	$93.18 \pm 0.42$
$A_{143 \times 217}^{\text{dustTE}}$	0.325	$0.334 \pm 0.081$	$D_{2000}$	228.5	$229.1 \pm 5.7$	$D_A(0.57)$	1381.9	$1382 \pm 13$
$A_{217}^{\text{dustTE}}$	1.635	$1.65 \pm 0.25$	$n_{s,0.002}$	0.9931	$0.991 \pm 0.035$	$F_{\text{AP}}(0.57)$	0.67445	$0.6745 \pm 0.0032$
$c_{100}$	0.99922	$0.99925 \pm 0.00099$	$Y_{\text{P}}$	0.245397	$0.24539_{-0.00011}^{+0.00012}$	$f\sigma_8(0.57)$	0.4675	$0.469 \pm 0.013$
$H_0$	68.03	$68.02 \pm 0.94$	$Y_{\text{P}}^{\text{BBN}}$	0.246723	$0.24671_{-0.00011}^{+0.00012}$	$\sigma_8(0.57)$	0.6017	$0.603 \pm 0.015$
$\Omega_\Lambda$	0.6947	$0.695_{-0.012}^{+0.014}$	$10^5 \text{D}/\text{H}$	2.5896	$2.594 \pm 0.048$	$\chi_{\text{lowTEB}}^2$	10492.49	$10494.4 \pm 2.2$
$\Omega_m$	0.3053	$0.305_{-0.014}^{+0.012}$	Age/Gyr	13.7841	$13.788 \pm 0.039$	$\chi_{\text{plikTE}}^2$	932.55	$939.5 \pm 4.1$
$\Omega_m h^2$	0.14129	$0.1412 \pm 0.0020$	$z_*$	1089.759	$1089.78 \pm 0.43$	$\chi_{\text{prior}}^2$	1.90	$7.9 \pm 3.6$
$\Omega_m h^3$	0.09612	$0.09603 \pm 0.00052$	$r_*$	144.874	$144.91 \pm 0.50$	$\chi_{\text{CMB}}^2$	11425.04	$11433.9 \pm 4.3$

Best-fit  $\chi_{\text{eff}}^2 = 11426.94$ ;  $\Delta\chi_{\text{eff}}^2 = -0.22$ ;  $\bar{\chi}_{\text{eff}}^2 = 11441.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.60$ ;  $R - 1 = 0.00865$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.49 ( $\Delta$  -1.01) plik\_dx11dr2\_HM\_v18\_TE: 932.55 ( $\Delta$  0.82)

## 17.16 base\_nrun\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02406	$0.0243 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4291	$0.426^{+0.032}_{-0.036}$	$D_A/\text{Gpc}$	13.894	$13.891 \pm 0.078$
$\Omega_c h^2$	0.11487	$0.1144 \pm 0.0048$	$\sigma_8 \Omega_m^{0.25}$	0.5882	$0.585 \pm 0.032$	$z_{\text{drag}}$	1063.40	$1063.7 \pm 2.6$
$100\theta_{\text{MC}}$	1.03977	$1.03991 \pm 0.00094$	$\sigma_8/h^{0.5}$	0.9624	$0.957 \pm 0.047$	$r_{\text{drag}}$	146.59	$146.54 \pm 0.94$
$\tau$	0.0766	$0.077^{+0.023}_{-0.026}$	$\langle d^2 \rangle^{1/2}$	2.404	$2.396 \pm 0.093$	$k_D$	0.14256	$0.1427 \pm 0.0015$
$\ln(10^{10} A_s)$	3.105	$3.105^{+0.052}_{-0.059}$	$z_{\text{re}}$	9.27	$9.1 \pm 2.1$	$100\theta_D$	0.15861	$0.1585^{+0.0012}_{-0.0015}$
$n_s$	0.9699	$0.973 \pm 0.019$	$10^9 A_s$	2.231	$2.23^{+0.11}_{-0.14}$	$z_{\text{eq}}$	3320	$3313 \pm 94$
$dn_s/d \ln k$	-0.0200	$-0.019 \pm 0.017$	$10^9 A_s e^{-2\tau}$	1.9142	$1.914 \pm 0.032$	$k_{\text{eq}}$	0.010133	$0.01011 \pm 0.00029$
$y_{\text{cal}}$	1.00012	$1.0000 \pm 0.0025$	$D_{40}$	1215.3	$1216 \pm 29$	$100\theta_{\text{eq}}$	0.8322	$0.835 \pm 0.021$
$A_{100}^{\text{dustEE}}$	0.0825	$0.0825 \pm 0.0059$	$D_{220}$	6021	$6041 \pm 210$	$100\theta_{s,\text{eq}}$	0.4579	$0.459 \pm 0.010$
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0498 \pm 0.0053$	$D_{810}$	2594.3	$2596 \pm 42$	$r_{\text{drag}}/D_V(0.57)$	0.07291	$0.0732 \pm 0.0018$
$A_{100 \times 217}^{\text{dustEE}}$	0.1009	$0.099 \pm 0.032$	$D_{1420}$	835.4	$837 \pm 21$	$H(0.57)$	94.54	$94.9^{+1.5}_{-1.8}$
$A_{143}^{\text{dustEE}}$	0.1001	$0.1010 \pm 0.0072$	$D_{2000}$	237.1	$237.9 \pm 8.2$	$D_A(0.57)$	1350.5	$1345 \pm 38$
$A_{143 \times 217}^{\text{dustEE}}$	0.2235	$0.224 \pm 0.047$	$n_{s,0.002}$	1.0343	$1.034 \pm 0.045$	$F_{\text{AP}}(0.57)$	0.6687	$0.6679 \pm 0.0080$
$A_{217}^{\text{dustEE}}$	0.651	$0.65 \pm 0.13$	$Y_P$	0.24611	$0.24617 \pm 0.00052$	$f\sigma_8(0.57)$	0.4611	$0.458 \pm 0.022$
$H_0$	70.22	$70.7 \pm 2.9$	$Y_P^{\text{BBN}}$	0.24743	$0.24750 \pm 0.00052$	$\sigma_8(0.57)$	0.6070	$0.606 \pm 0.016$
$\Omega_\Lambda$	0.7169	$0.719^{+0.033}_{-0.027}$	$10^5 D/H$	2.304	$2.29^{+0.18}_{-0.21}$	$\chi^2_{\text{lowTEB}}$	10492.67	$10494.6 \pm 2.1$
$\Omega_m$	0.2831	$0.281^{+0.027}_{-0.033}$	Age/Gyr	13.639	$13.61^{+0.17}_{-0.15}$	$\chi^2_{\text{plikEE}}$	751.02	$758.7 \pm 4.5$
$\Omega_m h^2$	0.13958	$0.1393 \pm 0.0040$	$z_*$	1087.51	$1087.3 \pm 1.7$	$\chi^2_{\text{prior}}$	3.90	$8.3 \pm 3.5$
$\Omega_m h^3$	0.09801	$0.0983 \pm 0.0020$	$r_*$	144.46	$144.45 \pm 0.83$	$\chi^2_{\text{CMB}}$	11243.68	$11253.3 \pm 4.9$
$\sigma_8$	0.8064	$0.804 \pm 0.027$	$100\theta_*$	1.03978	$1.03990 \pm 0.00091$			

Best-fit  $\chi^2_{\text{eff}} = 11247.58$ ;  $\Delta\chi^2_{\text{eff}} = -1.21$ ;  $\bar{\chi}^2_{\text{eff}} = 11261.59$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -0.23$ ;  $R - 1 = 0.00766$

$\chi^2_{\text{eff}}$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.67 ( $\Delta$  -0.94) plik\_dx11dr2\_HM\_v18\_EE: 751.02 ( $\Delta$  -0.18)

### 17.17 base\_nrun\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022313	$0.02231 \pm 0.00026$	$\sigma_8$	0.8070	$0.802 \pm 0.017$	$100\theta_*$	1.04117	$1.04118 \pm 0.00050$
$\Omega_c h^2$	0.11790	$0.1179 \pm 0.0022$	$\sigma_8 \Omega_m^{0.5}$	0.4450	$0.442 \pm 0.015$	$D_A/\text{Gpc}$	13.9285	$13.928 \pm 0.048$
$100\theta_{\text{MC}}$	1.04099	$1.04099 \pm 0.00051$	$\sigma_8 \Omega_m^{0.25}$	0.5992	$0.596 \pm 0.016$	$z_{\text{drag}}$	1059.67	$1059.65 \pm 0.55$
$\tau$	0.0523	$0.048 \pm 0.018$	$\sigma_8/h^{0.5}$	0.9782	$0.972 \pm 0.023$	$r_{\text{drag}}$	147.71	$147.71 \pm 0.52$
$\ln(10^{10} A_s)$	3.0238	$3.016^{+0.038}_{-0.044}$	$\langle d^2 \rangle^{1/2}$	2.453	$2.436 \pm 0.056$	$k_D$	0.14017	$0.14017 \pm 0.00059$
$n_s$	0.9784	$0.976 \pm 0.016$	$z_{\text{re}}$	7.45	$6.9^{+2.1}_{-1.8}$	$100\theta_D$	0.160913	$0.16092 \pm 0.00032$
$dn_s/d \ln k$	0.0334	$0.027 \pm 0.025$	$10^9 A_s$	2.057	$2.042^{+0.075}_{-0.092}$	$z_{\text{eq}}$	3350.7	$3351 \pm 50$
$y_{\text{cal}}$	1.00032	$1.0002 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8527	$1.852 \pm 0.022$	$k_{\text{eq}}$	0.010227	$0.01023 \pm 0.00015$
$A_{100}^{\text{dustTE}}$	0.1358	$0.138 \pm 0.038$	$D_{40}$	1284	$1273 \pm 51$	$100\theta_{\text{eq}}$	0.8225	$0.8226 \pm 0.0095$
$A_{100 \times 143}^{\text{dustTE}}$	0.1311	$0.134 \pm 0.029$	$D_{220}$	5709	$5704 \pm 58$	$100\theta_{s,\text{eq}}$	0.45423	$0.4543 \pm 0.0049$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.305 \pm 0.085$	$D_{810}$	2520.7	$2517 \pm 26$	$r_{\text{drag}}/D_V(0.57)$	0.07200	$0.07201 \pm 0.00075$
$A_{143}^{\text{dustTE}}$	0.152	$0.156 \pm 0.054$	$D_{1420}$	823.7	$820 \pm 16$	$H(0.57)$	93.156	$93.17 \pm 0.43$
$A_{143 \times 217}^{\text{dustTE}}$	0.351	$0.337 \pm 0.081$	$D_{2000}$	235.5	$233.8 \pm 7.1$	$D_A(0.57)$	1381.8	$1382 \pm 13$
$A_{217}^{\text{dustTE}}$	1.729	$1.66 \pm 0.26$	$n_{s,0.002}$	0.871	$0.888 \pm 0.071$	$F_{\text{AP}}(0.57)$	0.67412	$0.6742 \pm 0.0033$
$c_{100}$	0.99922	$0.9992 \pm 0.0010$	$Y_{\text{P}}$	0.245368	$0.24536 \pm 0.00012$	$f\sigma_8(0.57)$	0.4673	$0.464 \pm 0.011$
$H_0$	68.07	$68.07 \pm 0.97$	$Y_{\text{P}}^{\text{BBN}}$	0.246694	$0.24669 \pm 0.00012$	$\sigma_8(0.57)$	0.6022	$0.598 \pm 0.012$
$\Omega_\Lambda$	0.6960	$0.696 \pm 0.013$	$10^5 D/H$	2.6021	$2.603 \pm 0.049$	$\chi_{\text{lowEB}}^2$	5430.76	$5431.6 \pm 1.2$
$\Omega_m$	0.3040	$0.304 \pm 0.013$	Age/Gyr	13.7924	$13.792 \pm 0.040$	$\chi_{\text{plikTE}}^2$	929.83	$938.0 \pm 4.1$
$\Omega_m h^2$	0.14086	$0.1409 \pm 0.0021$	$z_*$	1089.808	$1089.82 \pm 0.45$	$\chi_{\text{prior}}^2$	1.82	$7.8 \pm 3.7$
$\Omega_m h^3$	0.09588	$0.09588 \pm 0.00053$	$r_*$	145.02	$145.02 \pm 0.51$	$\chi_{\text{CMB}}^2$	6360.59	$6369.6 \pm 4.3$

Best-fit  $\chi_{\text{eff}}^2 = 6362.40$ ;  $\Delta\chi_{\text{eff}}^2 = -1.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 6377.41$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.45$ ;  $R - 1 = 0.00882$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5430.76 ( $\Delta$  -0.01) plik\_dx11dr2\_HM\_v18\_TE: 929.83 ( $\Delta$  -1.41)

### 17.18 base\_nrun\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02339	$0.0236 \pm 0.0015$	$\sigma_8 \Omega_m^{0.5}$	0.4244	$0.425 \pm 0.034$	$D_A/\text{Gpc}$	13.947	$13.933 \pm 0.093$
$\Omega_c h^2$	0.1146	$0.1146 \pm 0.0051$	$\sigma_8 \Omega_m^{0.25}$	0.5810	$0.582 \pm 0.031$	$z_{\text{drag}}$	1061.88	$1062.2 \pm 3.1$
$100\theta_{\text{MC}}$	1.03992	$1.03992 \pm 0.00096$	$\sigma_8/h^{0.5}$	0.9521	$0.953 \pm 0.045$	$r_{\text{drag}}$	147.39	$147.2 \pm 1.2$
$\tau$	0.0506	$0.054^{+0.019}_{-0.023}$	$\langle d^2 \rangle^{1/2}$	2.414	$2.416 \pm 0.096$	$k_D$	0.14127	$0.1415 \pm 0.0020$
$\ln(10^{10} A_s)$	3.037	$3.047^{+0.048}_{-0.060}$	$z_{\text{re}}$	7.01	$7.2^{+2.1}_{-1.9}$	$100\theta_D$	0.15945	$0.1594^{+0.0015}_{-0.0019}$
$n_s$	0.9822	$0.983^{+0.022}_{-0.025}$	$10^9 A_s$	2.084	$2.108^{+0.094}_{-0.13}$	$z_{\text{eq}}$	3298	$3303 \pm 100$
$dn_s/d \ln k$	0.0291	$0.023 \pm 0.042$	$10^9 A_s e^{-2\tau}$	1.8835	$1.889 \pm 0.040$	$k_{\text{eq}}$	0.010066	$0.01008 \pm 0.00031$
$y_{\text{cal}}$	1.00017	$1.0001 \pm 0.0025$	$D_{40}$	1299	$1291^{+70}_{-78}$	$100\theta_{\text{eq}}$	0.8345	$0.835^{+0.021}_{-0.024}$
$A_{100}^{\text{dustEE}}$	0.0790	$0.0793 \pm 0.0065$	$D_{220}$	5947	$5965 \pm 240$	$100\theta_{s,\text{eq}}$	0.4596	$0.460^{+0.010}_{-0.011}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0457	$0.0462 \pm 0.0061$	$D_{810}$	2574.1	$2578 \pm 46$	$r_{\text{drag}}/D_V(0.57)$	0.07293	$0.0730^{+0.0018}_{-0.0021}$
$A_{100 \times 217}^{\text{dustEE}}$	0.1013	$0.099 \pm 0.033$	$D_{1420}$	844.4	$844 \pm 23$	$H(0.57)$	94.09	$94.3^{+1.6}_{-1.9}$
$A_{143}^{\text{dustEE}}$	0.0966	$0.0972 \pm 0.0078$	$D_{2000}$	242.6	$242.5^{+9.3}_{-11}$	$D_A(0.57)$	1357.9	$1355 \pm 41$
$A_{143 \times 217}^{\text{dustEE}}$	0.2210	$0.223 \pm 0.047$	$n_{s,0.002}$	0.888	$0.91 \pm 0.12$	$F_{\text{AP}}(0.57)$	0.6691	$0.6691 \pm 0.0085$
$A_{217}^{\text{dustEE}}$	0.632	$0.65 \pm 0.13$	$Y_P$	0.24583	$0.24589^{+0.00067}_{-0.00059}$	$f\sigma_8(0.57)$	0.4552	$0.455 \pm 0.021$
$H_0$	69.79	$70.0 \pm 3.0$	$Y_P^{\text{BBN}}$	0.24716	$0.24722^{+0.00067}_{-0.00059}$	$\sigma_8(0.57)$	0.5983	$0.599 \pm 0.013$
$\Omega_\Lambda$	0.7153	$0.715^{+0.036}_{-0.030}$	$10^5 D/H$	2.411	$2.40^{+0.21}_{-0.28}$	$\chi_{\text{lowEB}}^2$	5430.67	$5431.7 \pm 1.3$
$\Omega_m$	0.2847	$0.285^{+0.030}_{-0.036}$	Age/Gyr	13.701	$13.68 \pm 0.18$	$\chi_{\text{plikEE}}^2$	750.55	$759.2 \pm 4.6$
$\Omega_m h^2$	0.13866	$0.1389 \pm 0.0042$	$z_*$	1088.23	$1088.1^{+1.8}_{-2.2}$	$\chi_{\text{prior}}^2$	3.19	$7.6 \pm 3.4$
$\Omega_m h^3$	0.09678	$0.0971 \pm 0.0023$	$r_*$	145.05	$144.90 \pm 0.99$	$\chi_{\text{CMB}}^2$	6181.23	$6190.9 \pm 4.7$
$\sigma_8$	0.7954	$0.797 \pm 0.024$	$100\theta_*$	1.04000	$1.03998 \pm 0.00094$			

Best-fit  $\chi_{\text{eff}}^2 = 6184.41$ ;  $\Delta\chi_{\text{eff}}^2 = -0.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 6198.47$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.50$ ;  $R - 1 = 0.00962$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5430.67 ( $\Delta$  -0.05) plik\_dx11dr2\_HM\_v18\_EE: 750.55 ( $\Delta$  -0.20)

### 17.19 base\_nrun\_plikHM\_TT\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022111	$0.02211 \pm 0.00027$	$\Omega_\Lambda$	0.6790	$0.678 \pm 0.014$	$r_*$	144.455	$144.44 \pm 0.50$
$\Omega_c h^2$	0.12067	$0.1208 \pm 0.0022$	$\Omega_m$	0.3210	$0.322 \pm 0.014$	$100\theta_*$	1.040957	$1.04095 \pm 0.00047$
$100\theta_{\text{MC}}$	1.040757	$1.04074 \pm 0.00048$	$\Omega_m h^2$	0.14343	$0.1435 \pm 0.0021$	$D_A/\text{Gpc}$	13.8772	$13.876 \pm 0.046$
$\tau$	0.0814	$0.081 \pm 0.019$	$\Omega_m h^3$	0.09588	$0.09588 \pm 0.00053$	$z_{\text{drag}}$	1059.40	$1059.38 \pm 0.57$
$\ln(10^{10} A_s)$	3.0977	$3.098 \pm 0.037$	$\sigma_8$	0.8372	$0.837 \pm 0.015$	$r_{\text{drag}}$	147.20	$147.19 \pm 0.51$
$n_s$	0.9632	$0.9624 \pm 0.0062$	$\sigma_8 \Omega_m^{0.5}$	0.4743	$0.475 \pm 0.014$	$k_D$	0.14055	$0.14056 \pm 0.00058$
$dn_s/d \ln k$	0.0069	$0.0058 \pm 0.0099$	$\sigma_8 \Omega_m^{0.25}$	0.6301	$0.630 \pm 0.014$	$100\theta_D$	0.161072	$0.16108 \pm 0.00033$
$A_{217}^{\text{CIB}}$	65.5	$63.3 \pm 6.8$	$\sigma_8/h^{0.5}$	1.0239	$1.024 \pm 0.020$	$z_{\text{eq}}$	3412	$3414 \pm 50$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.12	—	$\langle d^2 \rangle^{1/2}$	2.5407	$2.541 \pm 0.049$	$k_{\text{eq}}$	0.010414	$0.01042 \pm 0.00015$
$A_{143}^{\text{tSZ}}$	7.18	$5.2 \pm 1.9$	$z_{\text{re}}$	10.35	$10.3^{+1.9}_{-1.6}$	$100\theta_{\text{eq}}$	0.8107	$0.8105 \pm 0.0094$
$A_{100}^{\text{PS}}$	250.6	$257 \pm 28$	$10^9 A_s$	2.215	$2.216 \pm 0.082$	$100\theta_{s,\text{eq}}$	0.44821	$0.4481 \pm 0.0048$
$A_{143}^{\text{PS}}$	39.3	$43 \pm 8$	$10^9 A_s e^{-2\tau}$	1.8820	$1.883 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07108	$0.07106 \pm 0.00074$
$A_{143 \times 217}^{\text{PS}}$	35.5	$39 \pm 10$	$D_{40}$	1262.8	$1263 \pm 28$	$H(0.57)$	92.667	$92.67 \pm 0.43$
$A_{217}^{\text{PS}}$	99.3	$98 \pm 10$	$D_{220}$	5721.5	$5723 \pm 41$	$D_A(0.57)$	1398.0	$1398 \pm 13$
$A^{\text{kSZ}}$	0.00	$< 4.46$	$D_{810}$	2532.0	$2532 \pm 14$	$F_{\text{AP}}(0.57)$	0.67841	$0.6786 \pm 0.0035$
$A_{100}^{\text{dustTT}}$	7.27	$7.3 \pm 1.9$	$D_{1420}$	814.3	$813.6 \pm 5.1$	$f\sigma_8(0.57)$	0.4892	$0.4890 \pm 0.0095$
$A_{143}^{\text{dustTT}}$	8.95	$8.9 \pm 1.8$	$D_{2000}$	230.69	$230.4 \pm 1.9$	$\sigma_8(0.57)$	0.6205	$0.620 \pm 0.011$
$A_{143 \times 217}^{\text{dustTT}}$	17.59	$17.0 \pm 4.2$	$n_{s,0.002}$	0.9408	$0.944 \pm 0.032$	$f_{2000}^{143}$	28.91	$29.6 \pm 3.1$
$A_{217}^{\text{dustTT}}$	82.2	$81.9 \pm 7.4$	$Y_P$	0.245273	$0.24527 \pm 0.00012$	$f_{2000}^{143 \times 217}$	31.77	$32.1 \pm 2.3$
$c_{100}$	0.99795	$0.99792 \pm 0.00077$	$Y_P^{\text{BBN}}$	0.246599	$0.24660 \pm 0.00012$	$f_{2000}^{217}$	105.46	$105.8 \pm 2.1$
$c_{217}$	0.99582	$0.9958 \pm 0.0014$	$10^5 D/H$	2.641	$2.642 \pm 0.052$	$\chi_{\text{plik}}^2$	762.1	$777.0 \pm 5.6$
$y_{\text{cal}}$	1.00018	$1.0002 \pm 0.0025$	Age/Gyr	13.8316	$13.832 \pm 0.042$	$\chi_{\text{prior}}^2$	2.24	$8.4 \pm 3.9$
$H_0$	66.85	$66.82 \pm 0.99$	$z_*$	1090.311	$1090.32 \pm 0.48$			

Best-fit  $\chi_{\text{eff}}^2 = 764.38$ ;  $\Delta\chi_{\text{eff}}^2 = -0.53$ ;  $\bar{\chi}_{\text{eff}}^2 = 785.35$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.00514$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM\_v18\_TT: 762.14 ( $\Delta -0.22$ )



## 17.20 base\_nrun\_plikHM\_TTTEEE\_tau07

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022216	$0.02220 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.084$	$Y_P^{\text{BBN}}$	0.246651	$0.246643 \pm 0.000077$
$\Omega_c h^2$	0.12000	$0.1202 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	$10^5 \text{D/H}$	2.6205	$2.623 \pm 0.032$
$100\theta_{\text{MC}}$	1.040738	$1.04073 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.340 \pm 0.080$	Age/Gyr	13.8186	$13.820 \pm 0.026$
$\tau$	0.0874	$0.084 \pm 0.016$	$A_{217}^{\text{dust}TE}$	1.673	$1.68 \pm 0.25$	$z_*$	1090.114	$1090.15 \pm 0.30$
$\ln(10^{10} A_s)$	3.1090	$3.103 \pm 0.032$	$c_{100}$	0.99830	$0.99818 \pm 0.00077$	$r_*$	144.549	$144.51 \pm 0.32$
$n_s$	0.96514	$0.9631 \pm 0.0048$	$c_{217}$	0.99569	$0.9959 \pm 0.0015$	$100\theta_*$	1.040936	$1.04093 \pm 0.00032$
$dn_s/d \ln k$	0.0086	$0.0058 \pm 0.0083$	$y_{\text{cal}}$	1.00011	$1.0003 \pm 0.0025$	$D_A/\text{Gpc}$	13.8865	$13.883 \pm 0.030$
$A_{217}^{\text{CIB}}$	61.4	$63.1 \pm 6.7$	$H_0$	67.17	$67.10 \pm 0.65$	$z_{\text{drag}}$	1059.589	$1059.56 \pm 0.34$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.63	—	$\Omega_\Lambda$	0.6833	$0.6821^{+0.0098}_{-0.0088}$	$r_{\text{drag}}$	147.263	$147.23 \pm 0.32$
$A_{143}^{\text{tSZ}}$	6.83	$5.5^{+2.1}_{-1.9}$	$\Omega_m$	0.3167	$0.3179 \pm 0.0091$	$k_D$	0.140566	$0.14059 \pm 0.00035$
$A_{100}^{\text{PS}}$	248.2	$259 \pm 28$	$\Omega_m h^2$	0.14286	$0.1430 \pm 0.0014$	$100\theta_D$	0.160945	$0.16096 \pm 0.00020$
$A_{143}^{\text{PS}}$	45.6	$42 \pm 8$	$\Omega_m h^3$	0.095952	$0.09596 \pm 0.00031$	$z_{\text{eq}}$	3398.5	$3403 \pm 33$
$A_{143 \times 217}^{\text{PS}}$	49.6	$40 \pm 10$	$\sigma_8$	0.8402	$0.837 \pm 0.013$	$k_{\text{eq}}$	0.010372	$0.01039 \pm 0.00010$
$A_{217}^{\text{PS}}$	105.2	$98 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4728	$0.472 \pm 0.010$	$100\theta_{\text{eq}}$	0.8134	$0.8127 \pm 0.0062$
$A^{\text{kSZ}}$	0.00	$< 3.88$	$\sigma_8 \Omega_m^{0.25}$	0.6303	$0.629 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.44954	$0.4492 \pm 0.0032$
$A_{100}^{\text{dust}TT}$	7.31	$7.3 \pm 1.9$	$\sigma_8/h^{0.5}$	1.0251	$1.022 \pm 0.017$	$r_{\text{drag}}/D_V(0.57)$	0.071290	$0.07124 \pm 0.00049$
$A_{143}^{\text{dust}TT}$	8.85	$8.9 \pm 1.8$	$\langle d^2 \rangle^{1/2}$	2.5476	$2.540 \pm 0.041$	$H(0.57)$	92.808	$92.79 \pm 0.28$
$A_{143 \times 217}^{\text{dust}TT}$	18.09	$16.9 \pm 4.1$	$z_{\text{re}}$	10.84	$10.5^{+1.6}_{-1.3}$	$D_A(0.57)$	1393.6	$1394.6 \pm 8.7$
$A_{217}^{\text{dust}TT}$	82.8	$81.7 \pm 7.4$	$10^9 A_s$	2.240	$2.229 \pm 0.072$	$F_{\text{AP}}(0.57)$	0.67734	$0.6776 \pm 0.0023$
$A_{100}^{\text{dust}EE}$	0.0802	$0.0803 \pm 0.0057$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882 \pm 0.012$	$f\sigma_8(0.57)$	0.4898	$0.4884 \pm 0.0079$
$A_{100 \times 143}^{\text{dust}EE}$	0.0475	$0.0477 \pm 0.0051$	$D_{40}$	1267.7	$1264 \pm 24$	$\sigma_8(0.57)$	0.6237	$0.6213 \pm 0.0098$
$A_{100 \times 217}^{\text{dust}EE}$	0.0991	$0.099 \pm 0.033$	$D_{220}$	5737.0	$5739 \pm 39$	$f_{2000}^{143}$	27.24	$28.8 \pm 3.1$
$A_{143}^{\text{dust}EE}$	0.0990	$0.0990 \pm 0.0069$	$D_{810}$	2533.7	$2533 \pm 14$	$f_{2000}^{143 \times 217}$	30.77	$31.6 \pm 2.2$
$A_{143 \times 217}^{\text{dust}EE}$	0.2224	$0.224 \pm 0.046$	$D_{1420}$	816.1	$814.5 \pm 5.0$	$f_{2000}^{217}$	104.24	$105.3 \pm 2.1$
$A_{217}^{\text{dust}EE}$	0.646	$0.65 \pm 0.13$	$D_{2000}$	231.63	$230.8 \pm 1.9$	$\chi_{\text{plik}}^2$	2430.4	$2450.3 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1417	$0.141 \pm 0.037$	$n_{\text{s},0.002}$	0.9373	$0.944 \pm 0.026$	$\chi_{\text{prior}}^2$	6.8	$20 \pm 6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.131 \pm 0.029$	$Y_P$	0.245325	$0.245317 \pm 0.000076$			

Best-fit  $\chi_{\text{eff}}^2 = 2437.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.88$ ;  $\bar{\chi}_{\text{eff}}^2 = 2470.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.08$ ;  $R - 1 = 0.00793$   
 $\chi_{\text{eff}}^2$ : CMB - plik\_dx11dr2\_HM.v18\_TTTEEE: 2430.43 ( $\Delta$  -0.16)

## 18 nrun+r

### 18.1 base\_nrun\_r\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022355	$0.02245 \pm 0.00028$	$\Omega_m h^2$	0.14270	$0.1422 \pm 0.0022$	$k_D$	0.14075	$0.14077 \pm 0.00058$
$\Omega_c h^2$	0.11970	$0.1191 \pm 0.0023$	$\Omega_m h^3$	0.09624	$0.09635 \pm 0.00055$	$100\theta_D$	0.160788	$0.16070 \pm 0.00033$
$100\theta_{MC}$	1.040907	$1.04099 \pm 0.00049$	$\sigma_8$	0.8359	$0.835 \pm 0.016$	$z_{eq}$	3395	$3384 \pm 51$
$\tau$	0.0874	$0.090^{+0.022}_{-0.024}$	$\sigma_8 \Omega_m^{0.5}$	0.4682	$0.465 \pm 0.014$	$k_{eq}$	0.010361	$0.01033 \pm 0.00016$
$\ln(10^{10} A_s)$	3.1101	$3.115 \pm 0.044$	$\sigma_8 \Omega_m^{0.25}$	0.6256	$0.623 \pm 0.014$	$100\theta_{eq}$	0.8146	$0.8170 \pm 0.0098$
$n_s$	0.9653	$0.9667 \pm 0.0066$	$\sigma_8/h^{0.5}$	1.0179	$1.015 \pm 0.021$	$100\theta_{s,eq}$	0.4501	$0.4513 \pm 0.0050$
$dn_s/d \ln k$	-0.0074	$-0.0126^{+0.0098}_{-0.0087}$	$\langle d^2 \rangle^{1/2}$	2.5060	$2.492 \pm 0.048$	$r_{drag}/D_V(0.57)$	0.07144	$0.07166 \pm 0.00079$
$r$	0.0000	$< 0.0765$	$z_{re}$	10.79	$10.9 \pm 1.9$	$H(0.57)$	92.985	$93.14 \pm 0.47$
$y_{cal}$	1.00010	$1.0004 \pm 0.0025$	$10^9 A_s$	2.242	$2.256^{+0.092}_{-0.11}$	$D_A(0.57)$	1389.4	$1385 \pm 14$
$A_{217}^{CIB}$	67.8	$65.1 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8828	$1.883 \pm 0.014$	$F_{AP}(0.57)$	0.67659	$0.6757 \pm 0.0036$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1222.0	$1231 \pm 23$	$f\sigma_8(0.57)$	0.4866	$0.485 \pm 0.010$
$A_{143}^{tSZ}$	7.10	$4.9 \pm 2.0$	$D_{220}$	5717.5	$5717 \pm 41$	$\sigma_8(0.57)$	0.6213	$0.622 \pm 0.013$
$A_{100}^{PS}$	255.8	$262 \pm 28$	$D_{810}$	2535.7	$2538 \pm 14$	$r_{0.002}$	0.0000	$< 0.0762$
$A_{143}^{PS}$	40.0	$45 \pm 8$	$D_{1420}$	813.6	$813.6 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0751$
$A_{143 \times 217}^{PS}$	33.0	$38^{+10}_{-10}$	$D_{2000}$	229.92	$229.7 \pm 2.0$	$\ln(10^{10} A_t)$	-7.93	$-0.13^{+1.4}_{-0.66}$
$A_{217}^{PS}$	97.1	$96 \pm 10$	$n_{s,0.002}$	0.9891	$1.007^{+0.029}_{-0.033}$	$r_{10}$	0.0000	$< 0.0387$
$A^{kSZ}$	0.02	$< 5.32$	$Y_P$	0.245386	$0.24542 \pm 0.00013$	$10^9 A_t$	0.000	$< 0.173$
$A_{100}^{dustTT}$	7.45	$7.5 \pm 1.9$	$Y_P^{BBN}$	0.246713	$0.24675 \pm 0.00013$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.144$
$A_{143}^{dustTT}$	9.09	$9.1 \pm 1.9$	$10^5 D/H$	2.594	$2.578 \pm 0.053$	$f_{2000}^{143}$	30.32	$31.1 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	17.68	$17.2 \pm 4.2$	Age/Gyr	13.7980	$13.784 \pm 0.045$	$f_{2000}^{143 \times 217}$	32.81	$33.3 \pm 2.3$
$A_{217}^{dustTT}$	81.8	$81.7 \pm 7.4$	$z_*$	1089.913	$1089.76 \pm 0.49$	$f_{2000}^{217}$	106.31	$106.7 \pm 2.1$
$c_{100}$	0.99793	$0.99790 \pm 0.00078$	$r_*$	144.52	$144.60 \pm 0.51$	$\chi_{lowTEB}^2$	10495.06	$10497.0 \pm 3.0$
$c_{217}$	0.99599	$0.9960 \pm 0.0015$	$100\theta_*$	1.041099	$1.04117 \pm 0.00048$	$\chi_{plik}^2$	764.1	$779.4 \pm 6.1$
$H_0$	67.44	$67.8 \pm 1.1$	$D_A/Gpc$	13.8816	$13.888 \pm 0.047$	$\chi_{prior}^2$	1.99	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6863	$0.690 \pm 0.014$	$z_{drag}$	1059.89	$1060.05 \pm 0.58$	$\chi_{CMB}^2$	11259.1	$11276.4 \pm 6.0$
$\Omega_m$	0.3137	$0.310 \pm 0.014$	$r_{drag}$	147.19	$147.24 \pm 0.51$			

Best-fit  $\chi_{eff}^2 = 11261.12$ ;  $\Delta\chi_{eff}^2 = -0.80$ ;  $\bar{\chi}_{eff}^2 = 11283.76$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.95$ ;  $R - 1 = 0.00694$

$\chi_{eff}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.06 ( $\Delta$  -1.41) plik\_dx11dr2\_HM\_v18\_TT: 764.07 ( $\Delta$  0.70)

## 18.2 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022405	$0.02246 \pm 0.00025$	$\sigma_8$	0.8361	$0.835 \pm 0.016$	$100\theta_{\text{eq}}$	0.8172	$0.8180 \pm 0.0056$
$\Omega_c h^2$	0.11910	$0.1189 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4654	$0.464 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45140	$0.4518 \pm 0.0029$
$100\theta_{\text{MC}}$	1.041037	$1.04103 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.622 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	0.071660	$0.07173 \pm 0.00044$
$\tau$	0.0899	$0.091 \pm 0.021$	$\sigma_8/h^{0.5}$	1.0158	$1.014 \pm 0.020$	$H(0.57)$	93.113	$93.18 \pm 0.30$
$\ln(10^{10} A_s)$	3.1142	$3.116 \pm 0.042$	$\langle d^2 \rangle^{1/2}$	2.5013	$2.489 \pm 0.045$	$D_A(0.57)$	1385.5	$1383.8 \pm 8.2$
$n_s$	0.96718	$0.9673 \pm 0.0047$	$z_{\text{re}}$	10.98	$10.9 \pm 1.7$	$F_{\text{AP}}(0.57)$	0.67560	$0.6753 \pm 0.0020$
$dn_s/d \ln k$	-0.0070	$-0.0125 \pm 0.0091$	$10^9 A_s$	2.251	$2.258^{+0.089}_{-0.10}$	$f\sigma_8(0.57)$	0.4857	$0.4846 \pm 0.0096$
$r$	0.0000	$< 0.0758$	$10^9 A_s e^{-2\tau}$	1.8808	$1.882 \pm 0.012$	$\sigma_8(0.57)$	0.6224	$0.622 \pm 0.012$
$y_{\text{cal}}$	1.00034	$1.0005 \pm 0.0025$	$D_{40}$	1220.4	$1230^{+21}_{-24}$	$r_{0.002}$	0.0000	$< 0.0754$
$A_{217}^{\text{CIB}}$	67.5	$65.0 \pm 6.7$	$D_{220}$	5721.1	$5719 \pm 41$	$r_{0.01}$	0.0000	$< 0.0742$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{810}$	2536.3	$2538 \pm 14$	$\ln(10^{10} A_t)$	-6.83	$-0.13^{+1.4}_{-0.65}$
$A_{143}^{\text{tSZ}}$	7.10	$4.8 \pm 2.0$	$D_{1420}$	814.5	$813.8 \pm 5.1$	$r_{10}$	0.0000	$< 0.0384$
$A_{100}^{\text{PS}}$	255.0	$262 \pm 28$	$D_{2000}$	230.35	$229.8 \pm 1.9$	$10^9 A_t$	0.000	$< 0.172$
$A_{143}^{\text{PS}}$	39.6	$45 \pm 8$	$n_{\text{s},0.002}$	0.9899	$1.007 \pm 0.029$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.143$
$A_{143 \times 217}^{\text{PS}}$	32.7	$39^{+10}_{-10}$	$Y_{\text{P}}$	0.245408	$0.24543 \pm 0.00011$	$f_{2000}^{143}$	30.04	$31.1 \pm 3.1$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$Y_{\text{P}}^{\text{BBN}}$	0.246735	$0.24676 \pm 0.00011$	$f_{2000}^{143 \times 217}$	32.53	$33.2 \pm 2.2$
$A^{\text{kSZ}}$	0.01	$< 5.30$	$10^5 \text{D}/\text{H}$	2.5847	$2.575 \pm 0.046$	$f_{2000}^{217}$	106.08	$106.7 \pm 2.1$
$A_{100}^{\text{dustTT}}$	7.45	$7.5 \pm 1.9$	$\text{Age}/\text{Gyr}$	13.7869	$13.781 \pm 0.033$	$\chi_{\text{lowTEB}}^2$	10495.15	$10496.8 \pm 3.0$
$A_{143}^{\text{dustTT}}$	8.99	$9.1 \pm 1.8$	$z_*$	1089.796	$1089.72 \pm 0.35$	$\chi_{\text{plik}}^2$	764.0	$778.9 \pm 7.2$
$A_{143 \times 217}^{\text{dustTT}}$	17.62	$17.2 \pm 4.1$	$r_*$	144.638	$144.65 \pm 0.34$	$\chi_{6\text{DF}}^2$	0.0215	$0.055 \pm 0.074$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$100\theta_*$	1.041211	$1.04120 \pm 0.00042$	$\chi_{\text{MGS}}^2$	1.28	$1.45 \pm 0.57$
$c_{100}$	0.99792	$0.99790 \pm 0.00078$	$D_A/\text{Gpc}$	13.8913	$13.893 \pm 0.033$	$\chi_{\text{DR11CMass}}^2$	2.458	$2.90 \pm 0.68$
$c_{217}$	0.99600	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.97	$1060.06 \pm 0.55$	$\chi_{\text{DR11LOWZ}}^2$	0.609	$0.66 \pm 0.58$
$H_0$	67.74	$67.86 \pm 0.60$	$r_{\text{drag}}$	147.290	$147.29 \pm 0.38$	$\chi_{\text{prior}}^2$	2.03	$7.4 \pm 3.6$
$\Omega_\Lambda$	0.6902	$0.6915 \pm 0.0078$	$k_{\text{D}}$	0.14068	$0.14073 \pm 0.00052$	$\chi_{\text{CMB}}^2$	11259.2	$11275.8 \pm 7.1$
$\Omega_m$	0.3098	$0.3085 \pm 0.0078$	$100\theta_{\text{D}}$	0.160756	$0.16069 \pm 0.00031$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.0$
$\Omega_m h^2$	0.14215	$0.1420 \pm 0.0013$	$z_{\text{eq}}$	3381.5	$3378 \pm 30$			
$\Omega_m h^3$	0.09629	$0.09635 \pm 0.00054$	$k_{\text{eq}}$	0.010321	$0.010310 \pm 0.000092$			

Best-fit  $\chi_{\text{eff}}^2 = 11265.57$ ;  $\Delta\chi_{\text{eff}}^2 = -0.87$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.20$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.84$ ;  $R - 1 = 0.00475$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.46 ( $\Delta$  0.01) DR11LOWZ: 0.61 ( $\Delta$  -0.01) CMB - lowl.SMW\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 10495.15  
( $\Delta$  -1.27) plik\_dx11dr2\_HM\_v18\_TT: 764.02 ( $\Delta$  0.42)

### 18.3 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022403	$0.02247^{+0.00027}_{-0.00030}$	$\Omega_m h^2$	0.14236	$0.1419 \pm 0.0020$	$k_D$	0.14074	$0.14073 \pm 0.00056$
$\Omega_c h^2$	0.11931	$0.1188 \pm 0.0021$	$\Omega_m h^3$	0.09628	$0.09636 \pm 0.00054$	$100\theta_D$	0.160741	$0.16068 \pm 0.00032$
$100\theta_{MC}$	1.040952	$1.04104 \pm 0.00048$	$\sigma_8$	0.8361	$0.835 \pm 0.016$	$z_{eq}$	3386.5	$3377 \pm 48$
$\tau$	0.0894	$0.091 \pm 0.022$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.464 \pm 0.013$	$k_{eq}$	0.010336	$0.01031 \pm 0.00015$
$\ln(10^{10} A_s)$	3.1138	$3.118 \pm 0.044$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.622 \pm 0.014$	$100\theta_{eq}$	0.8162	$0.8184 \pm 0.0091$
$n_s$	0.9661	$0.9675 \pm 0.0063$	$\sigma_8/h^{0.5}$	1.0166	$1.014 \pm 0.021$	$100\theta_{s,eq}$	0.45089	$0.4520 \pm 0.0047$
$dn_s/d \ln k$	-0.0079	$-0.0127 \pm 0.0091$	$\langle d^2 \rangle^{1/2}$	2.5033	$2.489 \pm 0.047$	$r_{drag}/D_V(0.57)$	0.07158	$0.07177 \pm 0.00073$
$r$	0.0000	$< 0.0775$	$z_{re}$	10.94	$11.0 \pm 1.9$	$H(0.57)$	93.070	$93.20^{+0.43}_{-0.49}$
$y_{cal}$	1.00039	$1.0005 \pm 0.0025$	$10^9 A_s$	2.251	$2.261^{+0.093}_{-0.11}$	$D_A(0.57)$	1386.8	$1383 \pm 13$
$A_{217}^{CIB}$	67.9	$65.0 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8823	$1.882 \pm 0.014$	$F_{AP}(0.57)$	0.67596	$0.6752 \pm 0.0033$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1220.4	$1229^{+22}_{-25}$	$f\sigma_8(0.57)$	0.4860	$0.485 \pm 0.010$
$A_{143}^{tSZ}$	7.20	$4.9 \pm 2.0$	$D_{220}$	5723.5	$5719 \pm 41$	$\sigma_8(0.57)$	0.6220	$0.622 \pm 0.013$
$A_{100}^{PS}$	255.4	$262 \pm 28$	$D_{810}$	2536.8	$2537 \pm 14$	$r_{0.002}$	0.0000	$< 0.0773$
$A_{143}^{PS}$	39.9	$45 \pm 8$	$D_{1420}$	814.1	$813.8 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0760$
$A_{143 \times 217}^{PS}$	32.9	$38^{+10}_{-10}$	$D_{2000}$	230.13	$229.8 \pm 1.9$	$\ln(10^{10} A_t)$	-7.08	$-0.12^{+1.4}_{-0.65}$
$A_{217}^{PS}$	97.0	$96 \pm 10$	$n_{s,0.002}$	0.9917	$1.008^{+0.029}_{-0.032}$	$r_{10}$	0.0000	$< 0.0392$
$A^{kSZ}$	0.00	$< 5.32$	$Y_P$	0.245407	$0.24544 \pm 0.00012$	$10^9 A_t$	0.000	$< 0.175$
$A_{100}^{dustTT}$	7.40	$7.5 \pm 1.9$	$Y_P^{BBN}$	0.246734	$0.24676 \pm 0.00012$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.146$
$A_{143}^{dustTT}$	9.14	$9.1 \pm 1.8$	$10^5 D/H$	2.585	$2.573 \pm 0.051$	$f_{2000}^{143}$	30.31	$31.0 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	17.85	$17.2 \pm 4.2$	$Age/Gyr$	13.7903	$13.779^{+0.046}_{-0.042}$	$f_{2000}^{143 \times 217}$	32.80	$33.2 \pm 2.3$
$A_{217}^{dustTT}$	81.9	$81.6 \pm 7.4$	$z_*$	1089.817	$1089.69 \pm 0.46$	$f_{2000}^{217}$	106.36	$106.7 \pm 2.1$
$c_{100}$	0.99794	$0.99790 \pm 0.00078$	$r_*$	144.585	$144.66 \pm 0.48$	$\chi_{lowTEB}^2$	10494.99	$10497.0 \pm 3.1$
$c_{217}$	0.99597	$0.9960 \pm 0.0015$	$100\theta_*$	1.041135	$1.04121 \pm 0.00047$	$\chi_{plik}^2$	764.1	$779.4 \pm 7.8$
$H_0$	67.63	$67.90 \pm 0.98$	$D_A/Gpc$	13.8872	$13.894 \pm 0.044$	$\chi_{JLA}^2$	706.740	$706.80 \pm 0.37$
$\Omega_\Lambda$	0.6888	$0.692 \pm 0.013$	$z_{drag}$	1059.97	$1060.08 \pm 0.58$	$\chi_{prior}^2$	2.02	$7.4 \pm 3.6$
$\Omega_m$	0.3112	$0.308 \pm 0.013$	$r_{drag}$	147.237	$147.29 \pm 0.48$	$\chi_{CMB}^2$	11259.1	$11276.4 \pm 7.8$

Best-fit  $\chi_{eff}^2 = 11967.89$ ;  $\Delta\chi_{eff}^2 = -0.84$ ;  $\bar{\chi}_{eff}^2 = 11990.57$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.97$ ;  $R - 1 = 0.00459$

$\chi_{eff}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10494.99 ( $\Delta$  -1.45) plik\_dx11dr2\_HM\_v18.TT: 764.14 ( $\Delta$  0.72) SN - JLA December\_2013: 706.74 ( $\Delta$  -0.02)

## 18.4 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022416	$0.02250^{+0.00027}_{-0.00031}$	$\Omega_m h^2$	0.14207	$0.1417 \pm 0.0021$	$k_D$	0.14068	$0.14071 \pm 0.00057$
$\Omega_c h^2$	0.11901	$0.1186 \pm 0.0022$	$\Omega_m h^3$	0.09628	$0.09638 \pm 0.00055$	$100\theta_D$	0.160741	$0.16066 \pm 0.00033$
$100\theta_{MC}$	1.041016	$1.04107 \pm 0.00048$	$\sigma_8$	0.8366	$0.835 \pm 0.016$	$z_{eq}$	3379.7	$3372 \pm 49$
$\tau$	0.0912	$0.093^{+0.022}_{-0.024}$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.463 \pm 0.013$	$k_{eq}$	0.010315	$0.01029 \pm 0.00015$
$\ln(10^{10} A_s)$	3.1167	$3.120 \pm 0.044$	$\sigma_8 \Omega_m^{0.25}$	0.6239	$0.622 \pm 0.014$	$100\theta_{eq}$	0.8175	$0.8194 \pm 0.0095$
$n_s$	0.9673	$0.9681 \pm 0.0064$	$\sigma_8/h^{0.5}$	1.0163	$1.013 \pm 0.021$	$100\theta_{s,eq}$	0.45156	$0.4524 \pm 0.0049$
$dn_s/d \ln k$	-0.0080	$-0.0132^{+0.0099}_{-0.0088}$	$\langle d^2 \rangle^{1/2}$	2.5010	$2.488 \pm 0.047$	$r_{drag}/D_V(0.57)$	0.07168	$0.07185 \pm 0.00076$
$r$	0.0000	$< 0.0793$	$z_{re}$	11.09	$11.1 \pm 1.9$	$H(0.57)$	93.126	$93.25^{+0.45}_{-0.50}$
$y_{cal}$	1.00030	$1.0004 \pm 0.0025$	$10^9 A_s$	2.257	$2.267^{+0.094}_{-0.11}$	$D_A(0.57)$	1385.0	$1382 \pm 14$
$A_{217}^{CIB}$	67.3	$65.1 \pm 6.8$	$10^9 A_s e^{-2\tau}$	1.8807	$1.881 \pm 0.014$	$F_{AP}(0.57)$	0.67548	$0.6748 \pm 0.0034$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1217.9	$1228^{+22}_{-25}$	$f\sigma_8(0.57)$	0.4859	$0.484 \pm 0.010$
$A_{143}^{tSZ}$	7.23	$4.9 \pm 2.0$	$D_{220}$	5720.2	$5720 \pm 41$	$\sigma_8(0.57)$	0.6229	$0.623 \pm 0.013$
$A_{100}^{PS}$	252.8	$262 \pm 28$	$D_{810}$	2536.3	$2537 \pm 14$	$r_{0.002}$	0.0000	$< 0.0794$
$A_{143}^{PS}$	39.1	$45 \pm 8$	$D_{1420}$	814.3	$813.9 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0779$
$A_{143 \times 217}^{PS}$	32.7	$38^{+9}_{-10}$	$D_{2000}$	230.27	$229.9 \pm 2.0$	$\ln(10^{10} A_t)$	-8.36	$-0.09^{+1.4}_{-0.66}$
$A_{217}^{PS}$	97.4	$96 \pm 10$	$n_{s,0.002}$	0.9932	$1.010^{+0.029}_{-0.033}$	$r_{10}$	0.0000	$< 0.0403$
$A^{kSZ}$	0.00	$< 5.30$	$Y_P$	0.245413	$0.24545 \pm 0.00013$	$10^9 A_t$	0.000	$< 0.180$
$A_{100}^{dustTT}$	7.44	$7.5 \pm 1.9$	$Y_P^{BBN}$	0.246740	$0.24677 \pm 0.00013$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.149$
$A_{143}^{dustTT}$	9.08	$9.1 \pm 1.9$	$10^5 D/H$	2.583	$2.568 \pm 0.052$	$f_{2000}^{143}$	29.97	$31.0 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	17.55	$17.2 \pm 4.2$	Age/Gyr	13.7858	$13.774 \pm 0.044$	$f_{2000}^{143 \times 217}$	32.51	$33.1 \pm 2.3$
$A_{217}^{dustTT}$	81.7	$81.6 \pm 7.4$	$z_*$	1089.775	$1089.64 \pm 0.48$	$f_{2000}^{217}$	106.10	$106.6 \pm 2.1$
$c_{100}$	0.99791	$0.99790 \pm 0.00078$	$r_*$	144.652	$144.70 \pm 0.49$	$\chi_{lowTEB}^2$	10494.99	$10497.0 \pm 3.1$
$c_{217}$	0.99589	$0.9960 \pm 0.0015$	$100\theta_*$	1.041196	$1.04124 \pm 0.00047$	$\chi_{plik}^2$	764.1	$779.4 \pm 6.6$
$H_0$	67.77	$68.0 \pm 1.0$	$D_A/\text{Gpc}$	13.8928	$13.897 \pm 0.046$	$\chi_{H070p6}^2$	0.724	$0.70 \pm 0.48$
$\Omega_\Lambda$	0.6907	$0.693^{+0.014}_{-0.013}$	$z_{drag}$	1059.97	$1060.13 \pm 0.59$	$\chi_{prior}^2$	2.09	$7.4 \pm 3.6$
$\Omega_m$	0.3093	$0.307 \pm 0.013$	$r_{drag}$	147.30	$147.32 \pm 0.50$	$\chi_{CMB}^2$	11259.1	$11276.5 \pm 6.5$

Best-fit  $\chi_{eff}^2 = 11261.93$ ;  $\Delta\chi_{eff}^2 = -0.89$ ;  $\bar{\chi}_{eff}^2 = 11284.60$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.90$ ;  $R - 1 = 0.00746$

$\chi_{eff}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10494.99 ( $\Delta$  -1.33) plik\_dx11dr2\_HM\_v18\_TT: 764.13 ( $\Delta$  0.46) Hubble - H070p6: 0.72 ( $\Delta$  -0.10)

### 18.5 base\_nrun\_r\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02245^{+0.00027}_{-0.00030}$	$\Omega_m h^2$	$0.1423 \pm 0.0021$	$k_D$	$0.14078 \pm 0.00057$
$\Omega_c h^2$	$0.1192 \pm 0.0023$	$\Omega_m h^3$	$0.09635 \pm 0.00054$	$100\theta_D$	$0.16070 \pm 0.00032$
$100\theta_{MC}$	$1.04099 \pm 0.00049$	$\sigma_8$	$0.836 \pm 0.016$	$z_{eq}$	$3384 \pm 51$
$\tau$	$0.091^{+0.020}_{-0.024}$	$\sigma_8 \Omega_m^{0.5}$	$0.465 \pm 0.014$	$k_{eq}$	$0.01033 \pm 0.00016$
$\ln(10^{10} A_s)$	$3.116^{+0.040}_{-0.047}$	$\sigma_8 \Omega_m^{0.25}$	$0.624 \pm 0.014$	$100\theta_{eq}$	$0.8169 \pm 0.0097$
$n_s$	$0.9667 \pm 0.0065$	$\sigma_8/h^{0.5}$	$1.015 \pm 0.020$	$100\theta_{s,eq}$	$0.4512 \pm 0.0050$
$dn_s/d \ln k$	$-0.0126 \pm 0.0091$	$\langle d^2 \rangle^{1/2}$	$2.493 \pm 0.047$	$r_{drag}/D_V(0.57)$	$0.07165 \pm 0.00078$
$r$	$< 0.0758$	$z_{re}$	$10.9 \pm 1.8$	$H(0.57)$	$93.14^{+0.44}_{-0.52}$
$y_{cal}$	$1.0004 \pm 0.0025$	$10^9 A_s$	$2.259^{+0.086}_{-0.11}$	$D_A(0.57)$	$1385 \pm 14$
$A_{217}^{CIB}$	$65.1 \pm 6.7$	$10^9 A_s e^{-2\tau}$	$1.883 \pm 0.014$	$F_{AP}(0.57)$	$0.6757 \pm 0.0035$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1231^{+22}_{-25}$	$f\sigma_8(0.57)$	$0.4854 \pm 0.0099$
$A_{143}^{tSZ}$	$4.9 \pm 2.0$	$D_{220}$	$5718 \pm 41$	$\sigma_8(0.57)$	$0.622^{+0.012}_{-0.014}$
$A_{100}^{PS}$	$262 \pm 28$	$D_{810}$	$2538 \pm 14$	$r_{0.002}$	$< 0.0753$
$A_{143}^{PS}$	$45 \pm 8$	$D_{1420}$	$813.6 \pm 5.2$	$r_{0.01}$	$< 0.0741$
$A_{143 \times 217}^{PS}$	$38^{+10}_{-10}$	$D_{2000}$	$229.8 \pm 2.0$	$\ln(10^{10} A_t)$	$-0.14^{+1.4}_{-0.65}$
$A_{217}^{PS}$	$96 \pm 10$	$n_{s,0.002}$	$1.007^{+0.029}_{-0.032}$	$r_{10}$	$< 0.0383$
$A^{kSZ}$	$< 5.33$	$Y_P$	$0.24543 \pm 0.00012$	$10^9 A_t$	$< 0.171$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P^{BBN}$	$0.24675 \pm 0.00013$	$10^9 A_t e^{-2\tau}$	$< 0.143$
$A_{143}^{dustTT}$	$9.1 \pm 1.9$	$10^5 D/H$	$2.578 \pm 0.052$	$f_{2000}^{143}$	$31.1 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.2$	$Age/Gyr$	$13.784^{+0.048}_{-0.042}$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.3$
$A_{217}^{dustTT}$	$81.6 \pm 7.4$	$z_*$	$1089.76 \pm 0.48$	$f_{2000}^{217}$	$106.7 \pm 2.1$
$c_{100}$	$0.99789 \pm 0.00078$	$r_*$	$144.59 \pm 0.51$	$\chi_{lowTEB}^2$	$10497.0 \pm 3.1$
$c_{217}$	$0.9960 \pm 0.0015$	$100\theta_*$	$1.04117 \pm 0.00048$	$\chi_{plik}^2$	$779.4 \pm 7.8$
$H_0$	$67.7 \pm 1.0$	$D_A/Gpc$	$13.887 \pm 0.047$	$\chi_{prior}^2$	$7.4 \pm 3.6$
$\Omega_\Lambda$	$0.690 \pm 0.014$	$z_{drag}$	$1060.05 \pm 0.58$	$\chi_{CMB}^2$	$11276.4 \pm 7.8$
$\Omega_m$	$0.310 \pm 0.014$	$r_{drag}$	$147.23 \pm 0.51$		

$$\bar{\chi}_{eff}^2 = 11283.76; \Delta\bar{\chi}_{eff}^2 = 2.12; R - 1 = 0.00414$$

## 18.6 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022336	$0.02232 \pm 0.00017$	$A_{143}^{\text{dust}TE}$	0.158	$0.156 \pm 0.053$	$100\theta_*$	1.040979	$1.04099 \pm 0.00031$
$\Omega_c h^2$	0.11968	$0.1197 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.336 \pm 0.081$	$D_A/\text{Gpc}$	13.8850	$13.887 \pm 0.030$
$100\theta_{\text{MC}}$	1.040796	$1.04080 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.696	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.818	$1059.79 \pm 0.34$
$\tau$	0.0860	$0.084 \pm 0.018$	$c_{100}$	0.99814	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	147.216	$147.24 \pm 0.32$
$\ln(10^{10} A_s)$	3.1082	$3.104 \pm 0.035$	$c_{217}$	0.99594	$0.9961 \pm 0.0015$	$k_D$	0.140712	$0.14067 \pm 0.00035$
$n_s$	0.96452	$0.9644 \pm 0.0049$	$H_0$	67.40	$67.40 \pm 0.66$	$100\theta_D$	0.160795	$0.16082 \pm 0.00020$
$dn_s/d \ln k$	-0.0055	$-0.0085 \pm 0.0076$	$\Omega_\Lambda$	0.6859	$0.6859 \pm 0.0091$	$z_{\text{eq}}$	3393.7	$3393 \pm 33$
$r$	0.0009	$< 0.0687$	$\Omega_m$	0.3141	$0.3141 \pm 0.0091$	$k_{\text{eq}}$	0.010358	$0.01036 \pm 0.00010$
$y_{\text{cal}}$	1.00034	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14266	$0.1426 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8146	$0.8148 \pm 0.0063$
$A_{217}^{\text{CIB}}$	67.0	$64.9 \pm 6.7$	$\Omega_m h^3$	0.096146	$0.09611 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45010	$0.4502 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.8351	$0.833 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.07143 \pm 0.00050$
$A_{143}^{\text{tSZ}}$	7.05	$5.0 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4680	$0.467 \pm 0.010$	$H(0.57)$	92.943	$92.94 \pm 0.29$
$A_{100}^{\text{PS}}$	256.8	$265 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6252	$0.623 \pm 0.011$	$D_A(0.57)$	1390.2	$1390.3 \pm 8.9$
$A_{143}^{\text{PS}}$	41.6	$45 \pm 8$	$\sigma_8/h^{0.5}$	1.0173	$1.014 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67669	$0.6767 \pm 0.0023$
$A_{143 \times 217}^{\text{PS}}$	36.5	$40_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.5098	$2.498 \pm 0.040$	$f\sigma_8(0.57)$	0.4862	$0.4848 \pm 0.0082$
$A_{217}^{\text{PS}}$	98.1	$97 \pm 10$	$z_{\text{re}}$	10.67	$10.4_{-1.5}^{+1.7}$	$\sigma_8(0.57)$	0.6206	$0.619 \pm 0.010$
$A^{\text{kSZ}}$	0.13	$< 4.84$	$10^9 A_s$	2.238	$2.230 \pm 0.079$	$r_{0.002}$	0.0008	$< 0.0662$
$A_{100}^{\text{dust}TT}$	7.10	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8845	$1.885 \pm 0.012$	$r_{0.01}$	0.0008	$< 0.0667$
$A_{143}^{\text{dust}TT}$	8.82	$8.9 \pm 1.8$	$D_{40}$	1230.2	$1242 \pm 21$	$\ln(10^{10} A_t)$	-3.92	$-0.24_{-0.63}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.31	$17.0 \pm 4.2$	$D_{220}$	5730.8	$5724 \pm 39$	$r_{10}$	0.0004	$< 0.0337$
$A_{217}^{\text{dust}TT}$	81.0	$81.4 \pm 7.4$	$D_{810}$	2537.7	$2538 \pm 14$	$10^9 A_t$	0.002	$< 0.153$
$A_{100}^{\text{dust}EE}$	0.0823	$0.0811 \pm 0.0057$	$D_{1420}$	814.25	$813.4 \pm 5.0$	$10^9 A_t e^{-2\tau}$	0.002	$< 0.130$
$A_{100 \times 143}^{\text{dust}EE}$	0.04932	$0.0488 \pm 0.0050$	$D_{2000}$	230.14	$229.6 \pm 1.8$	$f_{2000}^{143}$	29.92	$30.8 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.1091	$0.0995 \pm 0.033$	$n_{s,0.002}$	0.9822	$0.992 \pm 0.024$	$f_{2000}^{143 \times 217}$	32.46	$33.2 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1011	$0.1001 \pm 0.0069$	$Y_P$	0.245378	$0.245369 \pm 0.000075$	$f_{2000}^{217}$	105.91	$106.7 \pm 2.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246704	$0.246696 \pm 0.000075$	$\chi_{\text{lowTEB}}^2$	10495.80	$10497.5 \pm 2.9$
$A_{217}^{\text{dust}EE}$	0.641	$0.65 \pm 0.13$	$10^5 D/H$	2.5978	$2.601 \pm 0.031$	$\chi_{\text{plik}}^2$	2432.6	$2452.7 \pm 7.1$
$A_{100}^{\text{dust}TE}$	0.1392	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.8034	$13.805 \pm 0.027$	$\chi_{\text{prior}}^2$	6.8	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1305	$0.132 \pm 0.029$	$z_*$	1089.936	$1089.96 \pm 0.30$	$\chi_{\text{CMB}}^2$	12928.4	$12950.2 \pm 7.0$
$A_{100 \times 217}^{\text{dust}TE}$	0.294	$0.301 \pm 0.085$	$r_*$	144.540	$144.56 \pm 0.33$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.18$ ;  $\Delta\chi_{\text{eff}}^2 = -0.38$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.51$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.82$ ;  $R - 1 = 0.01111$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW.70\_dx11d.2014.10.03.v5c.Ap: 10495.80 ( $\Delta$  -1.14) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.59 ( $\Delta$  0.94)





## 18.7 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022334	$0.02235 \pm 0.00015$	$A_{217}^{\text{dust}TE}$	1.658	$1.65 \pm 0.25$	$k_D$	0.140588	$0.14060 \pm 0.00032$
$\Omega_c h^2$	0.11925	$0.1192 \pm 0.0011$	$c_{100}$	0.99822	$0.99816 \pm 0.00078$	$100\theta_D$	0.160820	$0.16080 \pm 0.00019$
$100\theta_{MC}$	1.040846	$1.04086 \pm 0.00030$	$c_{217}$	0.99599	$0.9961 \pm 0.0015$	$z_{eq}$	3383.5	$3382 \pm 24$
$\tau$	0.0873	$0.086 \pm 0.017$	$H_0$	67.561	$67.62 \pm 0.48$	$k_{eq}$	0.010327	$0.010321 \pm 0.000074$
$\ln(10^{10} A_s)$	3.1093	$3.108 \pm 0.035$	$\Omega_\Lambda$	0.6884	$0.6891 \pm 0.0065$	$100\theta_{eq}$	0.81650	$0.8169 \pm 0.0046$
$n_s$	0.96613	$0.9656 \pm 0.0042$	$\Omega_m$	0.3116	$0.3109 \pm 0.0065$	$100\theta_{s,eq}$	0.45108	$0.4513 \pm 0.0024$
$dn_s/d \ln k$	-0.0054	$-0.0085 \pm 0.0076$	$\Omega_m h^2$	0.14223	$0.1422 \pm 0.0010$	$r_{drag}/D_V(0.57)$	0.071559	$0.07160 \pm 0.00036$
$r$	0.0002	$< 0.0701$	$\Omega_m h^3$	0.096093	$0.09612 \pm 0.00031$	$H(0.57)$	92.998	$93.03 \pm 0.22$
$y_{cal}$	1.00021	$1.0005 \pm 0.0025$	$\sigma_8$	0.8347	$0.833 \pm 0.014$	$D_A(0.57)$	1388.1	$1387.3 \pm 6.5$
$A_{217}^{CIB}$	66.2	$64.8 \pm 6.7$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.4644 \pm 0.0088$	$F_{AP}(0.57)$	0.67606	$0.6759 \pm 0.0017$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.19	—	$\sigma_8 \Omega_m^{0.25}$	0.6237	$0.622 \pm 0.011$	$f\sigma_8(0.57)$	0.4854	$0.4841 \pm 0.0080$
$A_{143}^{\text{tSZ}}$	7.01	$5.1 \pm 2.0$	$\sigma_8/h^{0.5}$	1.0155	$1.013 \pm 0.017$	$\sigma_8(0.57)$	0.6209	$0.620 \pm 0.010$
$A_{100}^{PS}$	255.7	$264 \pm 28$	$\langle d^2 \rangle^{1/2}$	2.5038	$2.495 \pm 0.039$	$r_{0.002}$	0.0002	$< 0.0676$
$A_{143}^{PS}$	42.4	$45 \pm 8$	$z_{re}$	10.78	$10.6^{+1.7}_{-1.4}$	$r_{0.01}$	0.0002	$< 0.0681$
$A_{143 \times 217}^{PS}$	39.0	$40^{+10}_{-10}$	$10^9 A_s$	2.240	$2.238 \pm 0.077$	$\ln(10^{10} A_t)$	-5.61	$-0.22^{+1.4}_{-0.62}$
$A_{217}^{PS}$	99.7	$97 \pm 10$	$10^9 A_s e^{-2\tau}$	1.8816	$1.883 \pm 0.012$	$r_{10}$	0.0001	$< 0.0343$
$A^{\text{kSZ}}$	0.01	$< 4.78$	$D_{40}$	1226.2	$1240^{+20}_{-22}$	$10^9 A_t$	0.000	$< 0.157$
$A_{100}^{\text{dust}TT}$	7.44	$7.4 \pm 1.9$	$D_{220}$	5723.8	$5726 \pm 39$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.132$
$A_{143}^{\text{dust}TT}$	8.98	$8.9 \pm 1.8$	$D_{810}$	2536.3	$2537 \pm 14$	$f_{2000}^{143}$	29.58	$30.6 \pm 3.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.78	$17.0 \pm 4.2$	$D_{1420}$	814.28	$813.7 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.51	$33.1 \pm 2.1$
$A_{217}^{\text{dust}TT}$	82.1	$81.5 \pm 7.5$	$D_{2000}$	230.19	$229.8 \pm 1.8$	$f_{2000}^{217}$	105.97	$106.6 \pm 2.0$
$A_{100}^{\text{dust}EE}$	0.0819	$0.0813 \pm 0.0057$	$n_{s,0.002}$	0.9834	$0.993 \pm 0.024$	$\chi_{\text{lowTEB}}^2$	10495.60	$10497.5 \pm 2.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04942	$0.0490 \pm 0.0050$	$Y_P$	0.245377	$0.245385 \pm 0.000067$	$\chi_{\text{plik}}^2$	2432.8	$2452.3 \pm 7.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0995	$0.0996 \pm 0.032$	$Y_P^{\text{BBN}}$	0.246703	$0.246712 \pm 0.000067$	$\chi_{6DF}^2$	0.0377	$0.060 \pm 0.072$
$A_{143}^{\text{dust}EE}$	0.1009	$0.1003 \pm 0.0069$	$10^5 D/H$	2.5981	$2.594 \pm 0.028$	$\chi_{\text{MGS}}^2$	1.156	$1.27 \pm 0.45$
$A_{143 \times 217}^{\text{dust}EE}$	0.2231	$0.223 \pm 0.047$	$\text{Age/Gyr}$	13.8003	$13.797 \pm 0.022$	$\chi_{\text{DR11CMass}}^2$	2.550	$2.83 \pm 0.58$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$z_*$	1089.899	$1089.87 \pm 0.24$	$\chi_{\text{DR11LOWZ}}^2$	0.752	$0.79 \pm 0.54$
$A_{100}^{\text{dust}TE}$	0.1411	$0.142 \pm 0.038$	$r_*$	144.652	$144.66 \pm 0.25$	$\chi_{\text{prior}}^2$	6.9	$19.3 \pm 5.4$
$A_{100 \times 143}^{\text{dust}TE}$	0.1312	$0.132 \pm 0.029$	$100\theta_*$	1.041032	$1.04105 \pm 0.00029$	$\chi_{\text{CMB}}^2$	12928.4	$12949.8 \pm 6.9$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.301 \pm 0.085$	$D_A/\text{Gpc}$	13.8951	$13.896 \pm 0.024$	$\chi_{\text{BAO}}^2$	4.496	$4.95 \pm 0.84$
$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.053$	$z_{drag}$	1059.780	$1059.84 \pm 0.32$			
$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.334 \pm 0.080$	$r_{drag}$	147.331	$147.33 \pm 0.26$			

Best-fit  $\chi^2_{\text{eff}} = 12939.80$ ;  $\Delta\chi^2_{\text{eff}} = -0.36$ ;  $\bar{\chi}^2_{\text{eff}} = 12974.09$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.62$ ;  $R - 1 = 0.01017$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMASS: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.60  
( $\Delta$  -1.82) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.79 ( $\Delta$  1.25)

## 18.8 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022309	$0.02233 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.053$	$100\theta_*$	1.041009	$1.04101 \pm 0.00031$
$\Omega_c h^2$	0.11961	$0.1194 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.335 \pm 0.080$	$D_A/\text{Gpc}$	13.8882	$13.891 \pm 0.029$
$100\theta_{\text{MC}}$	1.040823	$1.04082 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.660	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.780	$1059.81 \pm 0.33$
$\tau$	0.0856	$0.085 \pm 0.018$	$c_{100}$	0.99819	$0.99816 \pm 0.00078$	$r_{\text{drag}}$	147.260	$147.28 \pm 0.32$
$\ln(10^{10} A_s)$	3.1066	$3.105 \pm 0.035$	$c_{217}$	0.99607	$0.9961 \pm 0.0015$	$k_D$	0.140642	$0.14064 \pm 0.00034$
$n_s$	0.96464	$0.9649 \pm 0.0048$	$H_0$	67.40	$67.49 \pm 0.64$	$100\theta_D$	0.160838	$0.16081 \pm 0.00019$
$dn_s/d \ln k$	-0.0051	$-0.0085 \pm 0.0076$	$\Omega_\Lambda$	0.6862	$0.6872 \pm 0.0088$	$z_{\text{eq}}$	3391.5	$3388 \pm 32$
$r$	0.0001	$< 0.0694$	$\Omega_m$	0.3138	$0.3128 \pm 0.0088$	$k_{\text{eq}}$	0.010351	$0.010341 \pm 0.000098$
$y_{\text{cal}}$	1.00029	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14257	$0.1424 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8150	$0.8157 \pm 0.0061$
$A_{217}^{\text{CIB}}$	67.9	$64.9 \pm 6.7$	$\Omega_m h^3$	0.096099	$0.09612 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45029	$0.4507 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8346	$0.833 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.071438	$0.07150 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	7.25	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4675	$0.4657 \pm 0.0098$	$H(0.57)$	92.936	$92.98 \pm 0.28$
$A_{100}^{\text{PS}}$	258.1	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.623 \pm 0.011$	$D_A(0.57)$	1390.2	$1389.1 \pm 8.6$
$A_{143}^{\text{PS}}$	39.3	$45 \pm 8$	$\sigma_8/h^{0.5}$	1.0165	$1.014 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67661	$0.6764 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	33.1	$40_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.5081	$2.497 \pm 0.040$	$f\sigma_8(0.57)$	0.4858	$0.4845 \pm 0.0081$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$z_{\text{re}}$	10.64	$10.5_{-1.5}^{+1.7}$	$\sigma_8(0.57)$	0.6203	$0.619 \pm 0.010$
$A^{\text{kSZ}}$	0.00	$< 4.81$	$10^9 A_s$	2.235	$2.233 \pm 0.079$	$r_{0.002}$	0.0001	$< 0.0669$
$A_{100}^{\text{dust}TT}$	7.38	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8830	$1.884 \pm 0.012$	$r_{0.01}$	0.0001	$< 0.0673$
$A_{143}^{\text{dust}TT}$	8.93	$8.9 \pm 1.8$	$D_{40}$	1229.9	$1241 \pm 21$	$\ln(10^{10} A_t)$	-6.44	$-0.23_{-0.63}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.47	$17.0 \pm 4.2$	$D_{220}$	5726.4	$5725 \pm 40$	$r_{10}$	0.0000	$< 0.0340$
$A_{217}^{\text{dust}TT}$	81.7	$81.5 \pm 7.5$	$D_{810}$	2536.2	$2537 \pm 14$	$10^9 A_t$	0.000	$< 0.155$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0812 \pm 0.0057$	$D_{1420}$	813.8	$813.5 \pm 5.0$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.131$
$A_{100 \times 143}^{\text{dust}EE}$	0.04924	$0.0489 \pm 0.0050$	$D_{2000}$	229.98	$229.7 \pm 1.8$	$f_{2000}^{143}$	30.05	$30.7 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.1004	$0.0996 \pm 0.032$	$n_{s,0.002}$	0.9809	$0.992 \pm 0.024$	$f_{2000}^{143 \times 217}$	32.74	$33.1 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1002 \pm 0.0069$	$Y_P$	0.245366	$0.245376 \pm 0.000074$	$f_{2000}^{217}$	106.31	$106.6 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2248	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246692	$0.246703 \pm 0.000074$	$\chi_{\text{lowTEB}}^2$	10495.80	$10497.5 \pm 2.9$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$10^5 D/H$	2.6028	$2.598 \pm 0.031$	$\chi_{\text{plik}}^2$	2432.2	$2452.6 \pm 7.1$
$A_{100}^{\text{dust}TE}$	0.1414	$0.142 \pm 0.038$	Age/Gyr	13.8050	$13.801 \pm 0.026$	$\chi_{\text{JLA}}^2$	706.820	$706.85 \pm 0.29$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132 \pm 0.029$	$z_*$	1089.965	$1089.92 \pm 0.30$	$\chi_{\text{prior}}^2$	7.1	$19.3 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.301 \pm 0.085$	$r_*$	144.577	$144.60 \pm 0.32$	$\chi_{\text{CMB}}^2$	12928.0	$12950.1 \pm 7.0$

Best-fit  $\chi_{\text{eff}}^2 = 13641.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.43$ ;  $\bar{\chi}_{\text{eff}}^2 = 13676.29$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.66$ ;  $R - 1 = 0.01141$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW.70\_dx11d.2014.10.03.v5c.Ap: 10495.80 ( $\Delta$  -1.56) plik\_dx11dr2.HM.v18.TTTEEE: 2432.24 ( $\Delta$  0.62) SN - JLA December.2013: 706.82 ( $\Delta$  -0.04)

## 18.9 base\_nrun\_r\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022325	$0.02234 \pm 0.00017$	$A_{143}^{\text{dust}TE}$	0.156	$0.155 \pm 0.053$	$100\theta_*$	1.041012	$1.04102 \pm 0.00031$
$\Omega_c h^2$	0.11950	$0.1194 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.335 \pm 0.080$	$D_A/\text{Gpc}$	13.8897	$13.891 \pm 0.030$
$100\theta_{\text{MC}}$	1.040818	$1.04083 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.663	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.780	$1059.83 \pm 0.34$
$\tau$	0.0854	$0.085 \pm 0.018$	$c_{100}$	0.99821	$0.99816 \pm 0.00078$	$r_{\text{drag}}$	147.274	$147.28 \pm 0.32$
$\ln(10^{10} A_s)$	3.1063	$3.106 \pm 0.035$	$c_{217}$	0.99600	$0.9961 \pm 0.0015$	$k_D$	0.140642	$0.14064 \pm 0.00035$
$n_s$	0.96519	$0.9650 \pm 0.0049$	$H_0$	67.46	$67.52 \pm 0.65$	$100\theta_D$	0.160821	$0.16081 \pm 0.00019$
$dn_s/d \ln k$	-0.0045	$-0.0086 \pm 0.0077$	$\Omega_\Lambda$	0.6869	$0.6875 \pm 0.0089$	$z_{\text{eq}}$	3389.3	$3387 \pm 33$
$r$	0.0000	$< 0.0696$	$\Omega_m$	0.3131	$0.3125 \pm 0.0089$	$k_{\text{eq}}$	0.010344	$0.01034 \pm 0.00010$
$y_{\text{cal}}$	1.00036	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14247	$0.1424 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8154	$0.8159 \pm 0.0062$
$A_{217}^{\text{CIB}}$	66.8	$64.9 \pm 6.7$	$\Omega_m h^3$	0.096111	$0.09612 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45052	$0.4508 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.09	—	$\sigma_8$	0.8342	$0.833 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	0.071477	$0.07152 \pm 0.00049$
$A_{143}^{\text{tSZ}}$	7.07	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4668	$0.4655 \pm 0.0099$	$H(0.57)$	92.961	$92.99 \pm 0.28$
$A_{100}^{\text{PS}}$	257.1	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6240	$0.623 \pm 0.011$	$D_A(0.57)$	1389.5	$1388.7 \pm 8.7$
$A_{143}^{\text{PS}}$	40.6	$45 \pm 8$	$\sigma_8/h^{0.5}$	1.0157	$1.014 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67643	$0.6763 \pm 0.0023$
$A_{143 \times 217}^{\text{PS}}$	35.7	$40_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.5066	$2.497 \pm 0.040$	$f\sigma_8(0.57)$	0.4855	$0.4844 \pm 0.0081$
$A_{217}^{\text{PS}}$	98.6	$97 \pm 10$	$z_{\text{re}}$	10.62	$10.5_{-1.5}^{+1.7}$	$\sigma_8(0.57)$	0.6202	$0.619 \pm 0.010$
$A^{\text{kSZ}}$	0.01	$< 4.80$	$10^9 A_s$	2.234	$2.235 \pm 0.079$	$r_{0.002}$	0.0000	$< 0.0671$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8830	$1.884 \pm 0.012$	$r_{0.01}$	0.0000	$< 0.0675$
$A_{143}^{\text{dust}TT}$	8.91	$8.9 \pm 1.8$	$D_{40}$	1230.4	$1241 \pm 21$	$\ln(10^{10} A_t)$	-7.46	$-0.23_{-0.63}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.45	$17.0 \pm 4.2$	$D_{220}$	5729.0	$5725 \pm 40$	$r_{10}$	0.0000	$< 0.0341$
$A_{217}^{\text{dust}TT}$	81.8	$81.5 \pm 7.5$	$D_{810}$	2537.1	$2538 \pm 14$	$10^9 A_t$	0.000	$< 0.156$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0813 \pm 0.0057$	$D_{1420}$	814.4	$813.6 \pm 5.0$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.131$
$A_{100 \times 143}^{\text{dust}EE}$	0.04941	$0.0489 \pm 0.0050$	$D_{2000}$	230.24	$229.7 \pm 1.8$	$f_{2000}^{143}$	29.66	$30.7 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.0996 \pm 0.032$	$n_{s,0.002}$	0.9797	$0.993 \pm 0.024$	$f_{2000}^{143 \times 217}$	32.46	$33.1 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1002 \pm 0.0069$	$Y_P$	0.245373	$0.245379 \pm 0.000074$	$f_{2000}^{217}$	106.06	$106.6 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2238	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246699	$0.246705 \pm 0.000075$	$\chi_{\text{lowTEB}}^2$	10495.88	$10497.5 \pm 2.9$
$A_{217}^{\text{dust}EE}$	0.653	$0.65 \pm 0.13$	$10^5 D/H$	2.5998	$2.597 \pm 0.031$	$\chi_{\text{plik}}^2$	2432.4	$2452.6 \pm 7.1$
$A_{100}^{\text{dust}TE}$	0.1396	$0.142 \pm 0.037$	$\text{Age/Gyr}$	13.8028	$13.800 \pm 0.026$	$\chi_{\text{H070p6}}^2$	0.890	$0.89 \pm 0.36$
$A_{100 \times 143}^{\text{dust}TE}$	0.1322	$0.132 \pm 0.029$	$z_*$	1089.934	$1089.90 \pm 0.30$	$\chi_{\text{prior}}^2$	6.9	$19.3 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.301 \pm 0.085$	$r_*$	144.594	$144.61 \pm 0.32$	$\chi_{\text{CMB}}^2$	12928.3	$12950.2 \pm 7.0$

Best-fit  $\chi_{\text{eff}}^2 = 12936.05$ ;  $\Delta\chi_{\text{eff}}^2 = -0.42$ ;  $\bar{\chi}_{\text{eff}}^2 = 12970.39$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.64$ ;  $R - 1 = 0.01160$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW.70\_dx11d.2014.10.03.v5c.Ap: 10495.88 ( $\Delta$  -1.12) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2432.38 ( $\Delta$  0.62) Hubble - H070p6: 0.89 ( $\Delta$  -0.01)

18.10 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232 \pm 0.00017$	$A_{143}^{\text{dust}TE}$	$0.156 \pm 0.053$	$100\theta_*$	$1.04099 \pm 0.00031$
$\Omega_c h^2$	$0.1196 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	$0.335 \pm 0.081$	$D_A/\text{Gpc}$	$13.887 \pm 0.030$
$100\theta_{\text{MC}}$	$1.04080 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.26$	$z_{\text{drag}}$	$1059.80 \pm 0.33$
$\tau$	$0.084 \pm 0.017$	$c_{100}$	$0.99816 \pm 0.00078$	$r_{\text{drag}}$	$147.24 \pm 0.32$
$\ln(10^{10} A_s)$	$3.105 \pm 0.034$	$c_{217}$	$0.9961 \pm 0.0014$	$k_D$	$0.14067 \pm 0.00035$
$n_s$	$0.9644 \pm 0.0049$	$H_0$	$67.40 \pm 0.66$	$100\theta_D$	$0.16082 \pm 0.00019$
$dn_s/d \ln k$	$-0.0085 \pm 0.0076$	$\Omega_\Lambda$	$0.6859 \pm 0.0091$	$z_{\text{eq}}$	$3393 \pm 33$
$r$	$< 0.0688$	$\Omega_m$	$0.3141 \pm 0.0091$	$k_{\text{eq}}$	$0.01035 \pm 0.00010$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\Omega_m h^2$	$0.1426 \pm 0.0014$	$100\theta_{\text{eq}}$	$0.8149 \pm 0.0063$
$A_{217}^{\text{CIB}}$	$64.9 \pm 6.7$	$\Omega_m h^3$	$0.09611 \pm 0.00031$	$100\theta_{s,\text{eq}}$	$0.4502 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.833 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	$0.07143 \pm 0.00050$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	$0.4668 \pm 0.0099$	$H(0.57)$	$92.94 \pm 0.29$
$A_{100}^{\text{PS}}$	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	$0.624 \pm 0.011$	$D_A(0.57)$	$1390.2 \pm 8.9$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$\sigma_8/h^{0.5}$	$1.015 \pm 0.017$	$F_{\text{AP}}(0.57)$	$0.6767 \pm 0.0023$
$A_{143 \times 217}^{\text{PS}}$	$40_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	$2.499 \pm 0.039$	$f\sigma_8(0.57)$	$0.4850 \pm 0.0080$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$z_{\text{re}}$	$10.5_{-1.5}^{+1.7}$	$\sigma_8(0.57)$	$0.619 \pm 0.010$
$A^{\text{kSZ}}$	$< 4.83$	$10^9 A_s$	$2.232 \pm 0.076$	$r_{0.002}$	$< 0.0663$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.885 \pm 0.012$	$r_{0.01}$	$< 0.0668$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$D_{40}$	$1241 \pm 21$	$\ln(10^{10} A_t)$	$-0.24_{-0.63}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	$17.0 \pm 4.2$	$D_{220}$	$5724 \pm 40$	$r_{10}$	$< 0.0337$
$A_{217}^{\text{dust}TT}$	$81.5 \pm 7.5$	$D_{810}$	$2538 \pm 14$	$10^9 A_t$	$< 0.154$
$A_{100}^{\text{dust}EE}$	$0.0812 \pm 0.0057$	$D_{1420}$	$813.4 \pm 5.0$	$10^9 A_t e^{-2\tau}$	$< 0.130$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0488 \pm 0.0050$	$D_{2000}$	$229.6 \pm 1.8$	$f_{2000}^{143}$	$30.8 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0996 \pm 0.032$	$n_{s,0.002}$	$0.992 \pm 0.024$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.1$
$A_{143}^{\text{dust}EE}$	$0.1001 \pm 0.0069$	$Y_P$	$0.245370 \pm 0.000075$	$f_{2000}^{217}$	$106.7 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	$0.246697 \pm 0.000075$	$\chi_{\text{lowTEB}}^2$	$10497.5 \pm 2.9$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$10^5 D/H$	$2.601 \pm 0.031$	$\chi_{\text{plik}}^2$	$2452.6 \pm 7.1$
$A_{100}^{\text{dust}TE}$	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	$13.804 \pm 0.026$	$\chi_{\text{prior}}^2$	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$z_*$	$1089.95 \pm 0.30$	$\chi_{\text{CMB}}^2$	$12950.1 \pm 7.0$
$A_{100 \times 217}^{\text{dust}TE}$	$0.301 \pm 0.085$	$r_*$	$144.56 \pm 0.33$		

$$\bar{\chi}_{\text{eff}}^2 = 12969.39; \Delta\bar{\chi}_{\text{eff}}^2 = 1.71; R - 1 = 0.01187$$

### 18.11 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022284	$0.02238 \pm 0.00027$	$\Omega_m h^2$	0.14143	$0.1410 \pm 0.0020$	$k_D$	0.14028	$0.14031 \pm 0.00052$
$\Omega_c h^2$	0.11850	$0.1180 \pm 0.0021$	$\Omega_m h^3$	0.09596	$0.09608 \pm 0.00051$	$100\theta_D$	0.160943	$0.16084 \pm 0.00031$
$100\theta_{MC}$	1.041034	$1.04111 \pm 0.00047$	$\sigma_8$	0.8160	$0.8155 \pm 0.0096$	$z_{eq}$	3364.4	$3354 \pm 47$
$\tau$	0.0677	$0.071 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4494 \pm 0.0092$	$k_{eq}$	0.010268	$0.01024 \pm 0.00014$
$\ln(10^{10} A_s)$	3.0661	$3.073 \pm 0.033$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.6053 \pm 0.0078$	$100\theta_{eq}$	0.8200	$0.8223 \pm 0.0092$
$n_s$	0.9681	$0.9690 \pm 0.0063$	$\sigma_8/h^{0.5}$	0.9906	$0.988 \pm 0.011$	$100\theta_{s,eq}$	0.45293	$0.4541 \pm 0.0047$
$dn_s/d \ln k$	-0.0021	$-0.0076^{+0.0092}_{-0.0080}$	$\langle d^2 \rangle^{1/2}$	2.4461	$2.434 \pm 0.029$	$r_{drag}/D_V(0.57)$	0.07183	$0.07204 \pm 0.00074$
$r$	0.0000	$< 0.0811$	$z_{re}$	8.99	$9.2^{+1.7}_{-1.6}$	$H(0.57)$	93.084	$93.25^{+0.44}_{-0.50}$
$y_{cal}$	1.00001	$1.0002 \pm 0.0025$	$10^9 A_s$	2.146	$2.161^{+0.067}_{-0.077}$	$D_A(0.57)$	1384.6	$1380 \pm 13$
$A_{217}^{CIB}$	68.0	$65.2 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8742	$1.874 \pm 0.013$	$F_{AP}(0.57)$	0.67495	$0.6740 \pm 0.0033$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1219.5	$1229 \pm 24$	$f\sigma_8(0.57)$	0.4733	$0.4720 \pm 0.0054$
$A_{143}^{tSZ}$	7.15	$4.8 \pm 2.0$	$D_{220}$	5713.4	$5716 \pm 42$	$\sigma_8(0.57)$	0.6081	$0.6086 \pm 0.0088$
$A_{100}^{PS}$	255.5	$263 \pm 28$	$D_{810}$	2532.7	$2534 \pm 14$	$r_{0.002}$	0.0000	$< 0.0791$
$A_{143}^{PS}$	39.9	$45 \pm 8$	$D_{1420}$	814.5	$814.2 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0793$
$A_{143 \times 217}^{PS}$	33.0	$38^{+10}_{-10}$	$D_{2000}$	229.96	$229.7 \pm 1.9$	$\ln(10^{10} A_t)$	-7.18	$-0.13^{+1.4}_{-0.66}$
$A_{217}^{PS}$	96.8	$95 \pm 10$	$n_{s,0.002}$	0.9749	$0.993^{+0.027}_{-0.031}$	$r_{10}$	0.0000	$< 0.0405$
$A^{kSZ}$	0.01	$< 5.51$	$Y_P$	0.245355	$0.24540 \pm 0.00012$	$10^9 A_t$	0.000	$< 0.175$
$A_{100}^{dustTT}$	7.46	$7.5 \pm 1.9$	$Y_P^{BBN}$	0.246681	$0.24672 \pm 0.00012$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.152$
$A_{143}^{dustTT}$	9.10	$9.1 \pm 1.8$	$10^5 D/H$	2.608	$2.590 \pm 0.051$	$f_{2000}^{143}$	30.30	$31.2 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	17.83	$17.3 \pm 4.2$	$Age/Gyr$	13.7964	$13.782 \pm 0.043$	$f_{2000}^{143 \times 217}$	32.87	$33.3 \pm 2.2$
$A_{217}^{dustTT}$	82.0	$81.8 \pm 7.4$	$z_*$	1089.896	$1089.73 \pm 0.47$	$f_{2000}^{217}$	106.37	$106.8 \pm 2.1$
$c_{100}$	0.99789	$0.99788 \pm 0.00078$	$r_*$	144.885	$144.95 \pm 0.46$	$\chi_{lensing}^2$	9.40	$10.2 \pm 1.7$
$c_{217}$	0.99609	$0.9961 \pm 0.0014$	$100\theta_*$	1.041228	$1.04130 \pm 0.00046$	$\chi_{lowTEB}^2$	10494.27	$10496.0 \pm 2.6$
$H_0$	67.85	$68.16 \pm 0.99$	$D_A/Gpc$	13.9148	$13.920 \pm 0.043$	$\chi_{plik}^2$	766.5	$781.4 \pm 5.9$
$\Omega_\Lambda$	0.6928	$0.696 \pm 0.013$	$z_{drag}$	1059.63	$1059.82 \pm 0.55$	$\chi_{prior}^2$	2.14	$7.5 \pm 3.6$
$\Omega_m$	0.3072	$0.304 \pm 0.013$	$r_{drag}$	147.584	$147.62 \pm 0.46$	$\chi_{CMB}^2$	11270.2	$11287.6 \pm 6.0$

Best-fit  $\chi_{eff}^2 = 11272.35$ ;  $\Delta\chi_{eff}^2 = -0.08$ ;  $\bar{\chi}_{eff}^2 = 11295.06$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.75$ ;  $R - 1 = 0.00636$

$\chi_{eff}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.40 ( $\Delta$  0.22) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.27 ( $\Delta$  -0.59) plik\_dx11dr2\_HM\_v18\_TT: 766.54 ( $\Delta$  0.22)

## 18.12 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022289	$0.02234 \pm 0.00023$	$\sigma_8$	0.8154	$0.8148 \pm 0.0091$	$100\theta_{\text{eq}}$	0.8197	$0.8203 \pm 0.0054$
$\Omega_c h^2$	0.11856	$0.1184 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.4511 \pm 0.0067$	$100\theta_{\text{s,eq}}$	0.45279	$0.4530 \pm 0.0028$
$100\theta_{\text{MC}}$	1.041048	$1.04105 \pm 0.00041$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.6062 \pm 0.0070$	$r_{\text{drag}}/D_V(0.57)$	0.071815	$0.07187 \pm 0.00043$
$\tau$	0.0666	$0.068 \pm 0.014$	$\sigma_8/h^{0.5}$	0.9900	$0.989 \pm 0.011$	$H(0.57)$	93.086	$93.14 \pm 0.30$
$\ln(10^{10} A_s)$	3.0641	$3.067 \pm 0.026$	$\langle d^2 \rangle^{1/2}$	2.4459	$2.436 \pm 0.028$	$D_A(0.57)$	1384.7	$1383.4 \pm 8.0$
$n_s$	0.96782	$0.9678 \pm 0.0046$	$z_{\text{re}}$	8.89	$8.9^{+1.3}_{-1.2}$	$F_{\text{AP}}(0.57)$	0.67501	$0.6748 \pm 0.0019$
$dn_s/d \ln k$	-0.0016	$-0.0069^{+0.0089}_{-0.0078}$	$10^9 A_s$	2.141	$2.148 \pm 0.055$	$f\sigma_8(0.57)$	0.4731	$0.4724 \pm 0.0052$
$r$	0.0003	$< 0.0768$	$10^9 A_s e^{-2\tau}$	1.8744	$1.876 \pm 0.012$	$\sigma_8(0.57)$	0.6076	$0.6073 \pm 0.0074$
$y_{\text{cal}}$	1.00000	$1.0002 \pm 0.0025$	$D_{40}$	1221.4	$1231 \pm 23$	$r_{0.002}$	0.0003	$< 0.0747$
$A_{217}^{\text{CIB}}$	67.5	$65.3 \pm 6.7$	$D_{220}$	5715.8	$5714 \pm 41$	$r_{0.01}$	0.0003	$< 0.0750$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{810}$	2532.8	$2534 \pm 14$	$\ln(10^{10} A_t)$	-4.98	$-0.20^{+1.4}_{-0.67}$
$A_{143}^{\text{tSZ}}$	7.21	$4.8 \pm 2.0$	$D_{1420}$	814.6	$814.0 \pm 5.1$	$r_{10}$	0.0001	$< 0.0383$
$A_{100}^{\text{PS}}$	255.1	$263 \pm 28$	$D_{2000}$	230.01	$229.5 \pm 1.9$	$10^9 A_t$	0.001	$< 0.166$
$A_{143}^{\text{PS}}$	39.9	$45 \pm 8$	$n_{\text{s},0.002}$	0.9730	$0.990^{+0.025}_{-0.029}$	$10^9 A_t e^{-2\tau}$	0.001	$< 0.145$
$A_{143 \times 217}^{\text{PS}}$	33.1	$38^{+10}_{-10}$	$Y_{\text{P}}$	0.245357	$0.24538 \pm 0.00010$	$f_{2000}^{143}$	30.31	$31.3 \pm 3.0$
$A_{217}^{\text{PS}}$	97.3	$95 \pm 10$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.24670 \pm 0.00010$	$f_{2000}^{143 \times 217}$	32.81	$33.4 \pm 2.2$
$A^{\text{kSZ}}$	0.01	$< 5.63$	$10^5 \text{D}/\text{H}$	2.6065	$2.597 \pm 0.043$	$f_{2000}^{217}$	106.31	$106.9 \pm 2.1$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$\text{Age}/\text{Gyr}$	13.7956	$13.790 \pm 0.032$	$\chi_{\text{lensing}}^2$	9.31	$10.2 \pm 1.7$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.8$	$z_*$	1089.894	$1089.82 \pm 0.34$	$\chi_{\text{lowTEB}}^2$	10494.45	$10495.9 \pm 2.5$
$A_{143 \times 217}^{\text{dustTT}}$	17.86	$17.3 \pm 4.2$	$r_*$	144.865	$144.86 \pm 0.32$	$\chi_{\text{plik}}^2$	766.6	$780.8 \pm 5.8$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.4$	$100\theta_*$	1.041245	$1.04124 \pm 0.00041$	$\chi_{6\text{DF}}^2$	0.0060	$0.043 \pm 0.060$
$c_{100}$	0.99794	$0.99788 \pm 0.00077$	$D_A/\text{Gpc}$	13.9127	$13.912 \pm 0.031$	$\chi_{\text{MGS}}^2$	1.47	$1.62 \pm 0.58$
$c_{217}$	0.99600	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	1059.63	$1059.75 \pm 0.51$	$\chi_{\text{DR11CMass}}^2$	2.403	$2.86 \pm 0.65$
$H_0$	67.84	$67.93 \pm 0.59$	$r_{\text{drag}}$	147.564	$147.54 \pm 0.35$	$\chi_{\text{DR11LOWZ}}^2$	0.423	$0.50 \pm 0.48$
$\Omega_\Lambda$	0.6925	$0.6934 \pm 0.0076$	$k_{\text{D}}$	0.140308	$0.14037 \pm 0.00047$	$\chi_{\text{prior}}^2$	2.04	$7.4 \pm 3.6$
$\Omega_{\text{m}}$	0.3075	$0.3066 \pm 0.0076$	$100\theta_{\text{D}}$	0.160937	$0.16087 \pm 0.00029$	$\chi_{\text{CMB}}^2$	11270.3	$11286.8 \pm 5.8$
$\Omega_{\text{m}} h^2$	0.14150	$0.1414 \pm 0.0012$	$z_{\text{eq}}$	3365.9	$3364 \pm 29$	$\chi_{\text{BAO}}^2$	4.30	$5.03 \pm 0.97$
$\Omega_{\text{m}} h^3$	0.095988	$0.09606 \pm 0.00050$	$k_{\text{eq}}$	0.010273	$0.010267 \pm 0.000088$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 11299.30$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.61$ ;  $R - 1 = 0.00897$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.42 ( $\Delta$  -0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta$  0.07) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.45 ( $\Delta$  -0.41) plik\_dx11dr2\_HM\_v18\_TT: 766.56 ( $\Delta$  0.36)

### 18.13 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022329	$0.02237 \pm 0.00023$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.4502 \pm 0.0066$	$r_{\text{drag}}/D_V(0.57)$	0.071912	$0.07195 \pm 0.00041$
$\Omega_c h^2$	0.11828	$0.1182 \pm 0.0012$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.6058 \pm 0.0070$	$H(0.57)$	93.149	$93.20 \pm 0.29$
$100\theta_{\text{MC}}$	1.041065	$1.04109 \pm 0.00041$	$\sigma_8/h^{0.5}$	0.9905	$0.988 \pm 0.011$	$D_A(0.57)$	1382.8	$1381.8 \pm 7.8$
$\tau$	0.0700	$0.069 \pm 0.013$	$\langle d^2 \rangle^{1/2}$	2.4459	$2.435 \pm 0.028$	$F_{\text{AP}}(0.57)$	0.67455	$0.6744 \pm 0.0019$
$\ln(10^{10} A_s)$	3.0702	$3.070 \pm 0.025$	$z_{\text{re}}$	9.19	$9.1^{+1.3}_{-1.2}$	$f\sigma_8(0.57)$	0.4733	$0.4722 \pm 0.0053$
$n_s$	0.96849	$0.9684 \pm 0.0045$	$10^9 A_s$	2.155	$2.154 \pm 0.055$	$\sigma_8(0.57)$	0.6090	$0.6080 \pm 0.0073$
$dn_s/d \ln k$	-0.0029	$-0.0072^{+0.0090}_{-0.0078}$	$10^9 A_s e^{-2\tau}$	1.8732	$1.875 \pm 0.012$	$r_{0.002}$	0.0000	$< 0.0765$
$r$	0.0001	$< 0.0790$	$D_{40}$	1217.5	$1230 \pm 23$	$r_{0.01}$	0.0001	$< 0.0771$
$y_{\text{cal}}$	0.99993	$1.0002 \pm 0.0025$	$D_{220}$	5715.5	$5716 \pm 41$	$\ln(10^{10} A_t)$	-6.78	$-0.17^{+1.4}_{-0.66}$
$A_{217}^{\text{CIB}}$	67.9	$65.3 \pm 6.7$	$D_{810}$	2532.2	$2534 \pm 14$	$r_{10}$	0.0000	$< 0.0392$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{1420}$	814.4	$814.2 \pm 5.1$	$10^9 A_t$	0.000	$< 0.170$
$A_{143}^{\text{tSZ}}$	7.14	$4.8 \pm 2.0$	$D_{2000}$	229.97	$229.6 \pm 1.9$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.148$
$A_{100}^{\text{PS}}$	256.0	$263 \pm 28$	$n_{s,0.002}$	0.9778	$0.992^{+0.025}_{-0.029}$	$f_{2000}^{143}$	30.29	$31.2 \pm 3.0$
$A_{143}^{\text{PS}}$	39.9	$45 \pm 8$	$Y_P$	0.245375	$0.24539 \pm 0.00010$	$f_{2000}^{143 \times 217}$	32.79	$33.4 \pm 2.2$
$A_{143 \times 217}^{\text{PS}}$	32.9	$38^{+10}_{-10}$	$Y_P^{\text{BBN}}$	0.246701	$0.24672 \pm 0.00010$	$f_{2000}^{217}$	106.22	$106.8 \pm 2.1$
$A_{217}^{\text{PS}}$	96.5	$95 \pm 10$	$10^5 D/H$	2.5991	$2.592 \pm 0.043$	$\chi_{\text{lensing}}^2$	9.47	$10.2 \pm 1.7$
$A^{\text{kSZ}}$	0.04	$< 5.61$	Age/Gyr	13.7900	$13.785 \pm 0.031$	$\chi_{\text{lowTEB}}^2$	10494.10	$10495.8 \pm 2.5$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$z_*$	1089.820	$1089.77 \pm 0.33$	$\chi_{\text{plik}}^2$	766.8	$780.9 \pm 5.8$
$A_{143}^{\text{dustTT}}$	9.19	$9.1 \pm 1.8$	$r_*$	144.910	$144.90 \pm 0.31$	$\chi_{\text{H070p6}}^2$	0.625	$0.62 \pm 0.26$
$A_{143 \times 217}^{\text{dustTT}}$	17.90	$17.3 \pm 4.2$	$100\theta_*$	1.041254	$1.04127 \pm 0.00040$	$\chi_{\text{JLA}}^2$	706.607	$706.64 \pm 0.15$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$D_A/\text{Gpc}$	13.9169	$13.916 \pm 0.031$	$\chi_{6\text{DF}}^2$	0.00098	$0.038 \pm 0.054$
$c_{100}$	0.99794	$0.99789 \pm 0.00077$	$z_{\text{drag}}$	1059.70	$1059.80 \pm 0.51$	$\chi_{\text{MGS}}^2$	1.61	$1.73 \pm 0.58$
$c_{217}$	0.99605	$0.9961 \pm 0.0014$	$r_{\text{drag}}$	147.596	$147.57 \pm 0.35$	$\chi_{\text{DR11CMass}}^2$	2.437	$2.88 \pm 0.67$
$H_0$	67.98	$68.05 \pm 0.57$	$k_D$	0.140305	$0.14035 \pm 0.00047$	$\chi_{\text{DR11LOWZ}}^2$	0.321	$0.41 \pm 0.42$
$\Omega_\Lambda$	0.6943	$0.6949 \pm 0.0073$	$100\theta_D$	0.160892	$0.16085 \pm 0.00029$	$\chi_{\text{prior}}^2$	2.03	$7.4 \pm 3.6$
$\Omega_m$	0.3057	$0.3051 \pm 0.0073$	$z_{\text{eq}}$	3360.0	$3359 \pm 28$	$\chi_{\text{CMB}}^2$	11270.3	$11286.8 \pm 5.8$
$\Omega_m h^2$	0.14125	$0.1412 \pm 0.0012$	$k_{\text{eq}}$	0.010255	$0.010252 \pm 0.000085$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.0$
$\Omega_m h^3$	0.09602	$0.09608 \pm 0.00050$	$100\theta_{\text{eq}}$	0.8209	$0.8213 \pm 0.0052$			
$\sigma_8$	0.8167	$0.8152 \pm 0.0091$	$100\theta_{s,\text{eq}}$	0.45339	$0.4535 \pm 0.0027$			

Best-fit  $\chi_{\text{eff}}^2 = 11983.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 12006.58$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 2.56$ ;  $R - 1 = 0.00779$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.47 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d\_2014\_10\_03 10494.10 ( $\Delta$  -0.82) plik\_dx11dr2\_HM\_v18\_TT: 766.78 ( $\Delta$  0.65) Hubble - H070p6: 0.62 ( $\Delta$  -0.04) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)



18.14 base\_nrun\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02240 \pm 0.00026$	$\Omega_m h^2$	$0.1408 \pm 0.0019$	$k_D$	$0.14029 \pm 0.00051$
$\Omega_c h^2$	$0.1178 \pm 0.0020$	$\Omega_m h^3$	$0.09609 \pm 0.00051$	$100\theta_D$	$0.16083 \pm 0.00031$
$100\theta_{MC}$	$1.04114 \pm 0.00046$	$\sigma_8$	$0.8164^{+0.0084}_{-0.010}$	$z_{eq}$	$3350 \pm 44$
$\tau$	$0.073^{+0.014}_{-0.020}$	$\sigma_8 \Omega_m^{0.5}$	$0.4490 \pm 0.0091$	$k_{eq}$	$0.01022 \pm 0.00014$
$\ln(10^{10} A_s)$	$3.077^{+0.026}_{-0.036}$	$\sigma_8 \Omega_m^{0.25}$	$0.6054 \pm 0.0078$	$100\theta_{eq}$	$0.8232^{+0.0083}_{-0.0095}$
$n_s$	$0.9695 \pm 0.0060$	$\sigma_8/h^{0.5}$	$0.988 \pm 0.011$	$100\theta_{s,eq}$	$0.4545^{+0.0043}_{-0.0048}$
$dn_s/d \ln k$	$-0.0078^{+0.0093}_{-0.0080}$	$\langle d^2 \rangle^{1/2}$	$2.435 \pm 0.028$	$r_{drag}/D_V(0.57)$	$0.07211^{+0.00066}_{-0.00078}$
$r$	$< 0.0818$	$z_{re}$	$9.4^{+1.4}_{-1.6}$	$H(0.57)$	$93.29^{+0.41}_{-0.49}$
$y_{cal}$	$1.0002 \pm 0.0025$	$10^9 A_s$	$2.169^{+0.053}_{-0.080}$	$D_A(0.57)$	$1379^{+14}_{-12}$
$A_{217}^{CIB}$	$65.2 \pm 6.7$	$10^9 A_s e^{-2\tau}$	$1.873 \pm 0.013$	$F_{AP}(0.57)$	$0.6737 \pm 0.0031$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1229 \pm 23$	$f\sigma_8(0.57)$	$0.4722 \pm 0.0054$
$A_{143}^{tSZ}$	$4.9 \pm 2.0$	$D_{220}$	$5716 \pm 42$	$\sigma_8(0.57)$	$0.6096^{+0.0071}_{-0.0095}$
$A_{100}^{PS}$	$262 \pm 28$	$D_{810}$	$2534 \pm 14$	$r_{0.002}$	$< 0.0801$
$A_{143}^{PS}$	$45 \pm 8$	$D_{1420}$	$814.2 \pm 5.2$	$r_{0.01}$	$< 0.0800$
$A_{143 \times 217}^{PS}$	$38^{+10}_{-10}$	$D_{2000}$	$229.7 \pm 1.9$	$\ln(10^{10} A_t)$	$-0.12^{+1.4}_{-0.66}$
$A_{217}^{PS}$	$95 \pm 10$	$n_{s,0.002}$	$0.995^{+0.026}_{-0.031}$	$r_{10}$	$< 0.0410$
$A^{kSZ}$	$< 5.54$	$Y_P$	$0.24540 \pm 0.00012$	$10^9 A_t$	$< 0.177$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P^{BBN}$	$0.24673 \pm 0.00012$	$10^9 A_t e^{-2\tau}$	$< 0.153$
$A_{143}^{dustTT}$	$9.1 \pm 1.8$	$10^5 D/H$	$2.586 \pm 0.049$	$f_{2000}^{143}$	$31.1 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	$17.3 \pm 4.2$	Age/Gyr	$13.778^{+0.044}_{-0.040}$	$f_{2000}^{143 \times 217}$	$33.3 \pm 2.2$
$A_{217}^{dustTT}$	$81.8 \pm 7.4$	$z_*$	$1089.69 \pm 0.45$	$f_{2000}^{217}$	$106.7 \pm 2.1$
$c_{100}$	$0.99789 \pm 0.00077$	$r_*$	$144.99 \pm 0.44$	$\chi^2_{lensing}$	$10.2 \pm 1.7$
$c_{217}$	$0.9961 \pm 0.0014$	$100\theta_*$	$1.04132 \pm 0.00045$	$\chi^2_{lowTEB}$	$10495.9 \pm 2.5$
$H_0$	$68.25^{+0.89}_{-1.0}$	$D_A/Gpc$	$13.924 \pm 0.041$	$\chi^2_{plik}$	$781.4 \pm 5.9$
$\Omega_\Lambda$	$0.697 \pm 0.012$	$z_{drag}$	$1059.84 \pm 0.55$	$\chi^2_{prior}$	$7.5 \pm 3.6$
$\Omega_m$	$0.303 \pm 0.012$	$r_{drag}$	$147.66 \pm 0.44$	$\chi^2_{CMB}$	$11287.4 \pm 5.9$

$$\bar{\chi}^2_{eff} = 11294.89; \Delta\bar{\chi}^2_{eff} = 2.83; R - 1 = 0.00700$$

18.15 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02230 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.154	$0.156 \pm 0.054$	$100\theta_*$	1.041066	$1.04105 \pm 0.00031$
$\Omega_c h^2$	0.11921	$0.1191 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.337 \pm 0.081$	$D_A/\text{Gpc}$	13.8998	$13.902 \pm 0.028$
$100\theta_{\text{MC}}$	1.040868	$1.04086 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.660	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.666	$1059.70 \pm 0.33$
$\tau$	0.0643	$0.064 \pm 0.014$	$c_{100}$	0.99817	$0.99811 \pm 0.00077$	$r_{\text{drag}}$	147.403	$147.42 \pm 0.30$
$\ln(10^{10} A_s)$	3.0614	$3.062 \pm 0.025$	$c_{217}$	0.99607	$0.9961 \pm 0.0014$	$k_D$	0.140469	$0.14046 \pm 0.00033$
$n_s$	0.96594	$0.9658 \pm 0.0048$	$H_0$	67.54	$67.61 \pm 0.63$	$100\theta_D$	0.160902	$0.16088 \pm 0.00019$
$dn_s/d \ln k$	-0.0007	$-0.0049 \pm 0.0073$	$\Omega_\Lambda$	0.6884	$0.6892 \pm 0.0085$	$z_{\text{eq}}$	3381.1	$3378 \pm 31$
$r$	0.0000	$< 0.0711$	$\Omega_m$	0.3116	$0.3108 \pm 0.0085$	$k_{\text{eq}}$	0.010319	$0.010310 \pm 0.000095$
$y_{\text{cal}}$	1.00005	$1.0002 \pm 0.0025$	$\Omega_m h^2$	0.14213	$0.1420 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8168	$0.8174 \pm 0.0059$
$A_{217}^{\text{CIB}}$	67.8	$65.3 \pm 6.6$	$\Omega_m h^3$	0.095996	$0.09600 \pm 0.00031$	$100\theta_{s,\text{eq}}$	0.45128	$0.4516 \pm 0.0030$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8160	$0.8147 \pm 0.0087$	$r_{\text{drag}}/D_V(0.57)$	0.071572	$0.07162 \pm 0.00047$
$A_{143}^{\text{tSZ}}$	7.28	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4555	$0.4541 \pm 0.0069$	$H(0.57)$	92.968	$93.00^{+0.27}_{-0.30}$
$A_{100}^{\text{PS}}$	257.2	$265 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6096	$0.6082 \pm 0.0068$	$D_A(0.57)$	1388.6	$1387.7 \pm 8.4$
$A_{143}^{\text{PS}}$	38.9	$45 \pm 8$	$\sigma_8/h^{0.5}$	0.9929	$0.991 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67605	$0.6758 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	33.0	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4554	$2.445 \pm 0.026$	$f\sigma_8(0.57)$	0.47445	$0.4734 \pm 0.0050$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$z_{\text{re}}$	8.68	$8.6 \pm 1.3$	$\sigma_8(0.57)$	0.6070	$0.6063 \pm 0.0072$
$A^{\text{kSZ}}$	0.00	$< 5.00$	$10^9 A_s$	2.136	$2.137 \pm 0.054$	$r_{0.002}$	0.0000	$< 0.0675$
$A_{100}^{\text{dust}TT}$	7.47	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8780	$1.879 \pm 0.012$	$r_{0.01}$	0.0000	$< 0.0688$
$A_{143}^{\text{dust}TT}$	8.97	$9.1 \pm 1.8$	$D_{40}$	1228.3	$1238^{+21}_{-23}$	$\ln(10^{10} A_t)$	-7.02	$-0.25^{+1.4}_{-0.61}$
$A_{143 \times 217}^{\text{dust}TT}$	17.55	$17.3 \pm 4.2$	$D_{220}$	5722.6	$5719 \pm 39$	$r_{10}$	0.0000	$< 0.0347$
$A_{217}^{\text{dust}TT}$	81.8	$81.6 \pm 7.4$	$D_{810}$	2534.2	$2535 \pm 14$	$10^9 A_t$	0.000	$< 0.152$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0811 \pm 0.0057$	$D_{1420}$	814.83	$814.0 \pm 5.0$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.134$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0488 \pm 0.0050$	$D_{2000}$	230.10	$229.6 \pm 1.8$	$f_{2000}^{143}$	29.83	$30.9 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0992	$0.0998 \pm 0.032$	$n_{s,0.002}$	0.9681	$0.982 \pm 0.023$	$f_{2000}^{143 \times 217}$	32.58	$33.3 \pm 2.1$
$A_{143}^{\text{dust}EE}$	0.1007	$0.1000 \pm 0.0069$	$Y_P$	0.245353	$0.245359 \pm 0.000074$	$f_{2000}^{217}$	106.10	$106.7 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2234	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246679	$0.246685 \pm 0.000075$	$\chi^2_{\text{lensing}}$	9.98	$10.6 \pm 2.0$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$10^5 D/H$	2.6086	$2.605 \pm 0.031$	$\chi^2_{\text{lowTEB}}$	10495.08	$10496.5 \pm 2.5$
$A_{100}^{\text{dust}TE}$	0.1432	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.8048	$13.803 \pm 0.026$	$\chi^2_{\text{plik}}$	2434.9	$2455.1 \pm 7.0$
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.132 \pm 0.029$	$z_*$	1089.966	$1089.93 \pm 0.29$	$\chi^2_{\text{prior}}$	7.2	$19.4 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.304 \pm 0.085$	$r_*$	144.706	$144.73 \pm 0.31$	$\chi^2_{\text{CMB}}$	12940.0	$12962.2 \pm 6.9$

Best-fit  $\chi^2_{\text{eff}} = 12947.17$ ;  $\Delta\chi^2_{\text{eff}} = -0.00$ ;  $\bar{\chi}^2_{\text{eff}} = 12981.61$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.50$ ;  $R - 1 = 0.01649$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.98 ( $\Delta$  0.20) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.08 ( $\Delta$  -0.21) plik\_dx11dr2\_HM\_v18.TTTEE: 2434.94 ( $\Delta$  0.03)



18.16 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022291	$0.02231 \pm 0.00015$	$A_{217}^{\text{dust}TE}$	1.669	$1.66 \pm 0.25$	$k_D$	0.140459	$0.14043 \pm 0.00031$
$\Omega_c h^2$	0.11909	$0.1188 \pm 0.0010$	$c_{100}$	0.99816	$0.99811 \pm 0.00077$	$100\theta_D$	0.160893	$0.16087 \pm 0.00019$
$100\theta_{MC}$	1.040893	$1.04089 \pm 0.00030$	$c_{217}$	0.99608	$0.9961 \pm 0.0014$	$z_{eq}$	3378.5	$3373 \pm 23$
$\tau$	0.0650	$0.066 \pm 0.012$	$H_0$	67.599	$67.70 \pm 0.47$	$k_{eq}$	0.010312	$0.010295 \pm 0.000072$
$\ln(10^{10} A_s)$	3.0625	$3.064 \pm 0.023$	$\Omega_\Lambda$	0.6892	$0.6906 \pm 0.0063$	$100\theta_{eq}$	0.81730	$0.8183 \pm 0.0045$
$n_s$	0.96606	$0.9664 \pm 0.0042$	$\Omega_m$	0.3108	$0.3094 \pm 0.0063$	$100\theta_{s,eq}$	0.45153	$0.4521 \pm 0.0023$
$dn_s/d \ln k$	-0.0011	$-0.0050 \pm 0.0073$	$\Omega_m h^2$	0.14203	$0.14180 \pm 0.00098$	$r_{drag}/D_V(0.57)$	0.071614	$0.07169 \pm 0.00035$
$r$	0.0000	$< 0.0717$	$\Omega_m h^3$	0.096008	$0.09600 \pm 0.00031$	$H(0.57)$	92.994	$93.03 \pm 0.22$
$y_{cal}$	1.00003	$1.0002 \pm 0.0025$	$\sigma_8$	0.8159	$0.8150 \pm 0.0085$	$D_A(0.57)$	1387.8	$1386.5 \pm 6.4$
$A_{217}^{CIB}$	67.8	$65.2 \pm 6.6$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.4533 \pm 0.0060$	$F_{AP}(0.57)$	0.67585	$0.6755 \pm 0.0016$
$\xi^{tSZ \times CIB}$	0.01	—	$\sigma_8 \Omega_m^{0.25}$	0.6092	$0.6078 \pm 0.0065$	$f\sigma_8(0.57)$	0.47423	$0.4733 \pm 0.0049$
$A_{143}^{tSZ}$	7.33	$5.1 \pm 2.0$	$\sigma_8/h^{0.5}$	0.9924	$0.990 \pm 0.010$	$\sigma_8(0.57)$	0.6072	$0.6068 \pm 0.0068$
$A_{100}^{PS}$	257.5	$265 \pm 28$	$\langle d^2 \rangle^{1/2}$	2.4542	$2.444 \pm 0.026$	$r_{0.002}$	0.0000	$< 0.0683$
$A_{143}^{PS}$	38.8	$45 \pm 8$	$z_{re}$	8.74	$8.8 \pm 1.2$	$r_{0.01}$	0.0000	$< 0.0694$
$A_{143 \times 217}^{PS}$	32.7	$39_{-10}^{+10}$	$10^9 A_s$	2.1380	$2.142 \pm 0.049$	$\ln(10^{10} A_t)$	-6.89	$-0.25_{-0.61}^{+1.4}$
$A_{217}^{PS}$	96.6	$96 \pm 10$	$10^9 A_s e^{-2\tau}$	1.8775	$1.878 \pm 0.011$	$r_{10}$	0.0000	$< 0.0350$
$A^{kSZ}$	0.00	$< 4.97$	$D_{40}$	1227.1	$1237_{-23}^{+20}$	$10^9 A_t$	0.000	$< 0.154$
$A_{100}^{\text{dust}TT}$	7.48	$7.5 \pm 1.9$	$D_{220}$	5723.5	$5720 \pm 39$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.135$
$A_{143}^{\text{dust}TT}$	9.14	$9.1 \pm 1.8$	$D_{810}$	2534.1	$2535 \pm 14$	$f_{2000}^{143}$	29.89	$30.8 \pm 3.0$
$A_{143 \times 217}^{\text{dust}TT}$	17.77	$17.3 \pm 4.2$	$D_{1420}$	814.71	$814.1 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.61	$33.2 \pm 2.1$
$A_{217}^{\text{dust}TT}$	81.9	$81.6 \pm 7.4$	$D_{2000}$	230.05	$229.6 \pm 1.8$	$f_{2000}^{217}$	106.14	$106.6 \pm 2.0$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0812 \pm 0.0057$	$n_{s,0.002}$	0.9697	$0.982 \pm 0.023$	$\chi_{lensing}^2$	9.93	$10.5 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0488 \pm 0.0050$	$Y_P$	0.245358	$0.245365 \pm 0.000067$	$\chi_{lowTEB}^2$	10494.93	$10496.4 \pm 2.5$
$A_{100 \times 217}^{\text{dust}EE}$	0.1001	$0.0999 \pm 0.033$	$Y_P^{BBN}$	0.246684	$0.246692 \pm 0.000068$	$\chi_{plik}^2$	2435.1	$2455.0 \pm 6.9$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1000 \pm 0.0069$	$10^5 D/H$	2.6063	$2.603 \pm 0.028$	$\chi_{6DF}^2$	0.0289	$0.045 \pm 0.058$
$A_{143 \times 217}^{\text{dust}EE}$	0.2245	$0.223 \pm 0.047$	$\text{Age/Gyr}$	13.8025	$13.800 \pm 0.022$	$\chi_{MGS}^2$	1.217	$1.38 \pm 0.46$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$z_*$	1089.940	$1089.89 \pm 0.24$	$\chi_{DR11CMass}^2$	2.490	$2.74 \pm 0.47$
$A_{100}^{\text{dust}TE}$	0.1408	$0.142 \pm 0.038$	$r_*$	144.727	$144.78 \pm 0.24$	$\chi_{DR11LOWZ}^2$	0.675	$0.66 \pm 0.48$
$A_{100 \times 143}^{\text{dust}TE}$	0.1307	$0.132 \pm 0.029$	$100\theta_*$	1.041087	$1.04108 \pm 0.00029$	$\chi_{prior}^2$	7.2	$19.5 \pm 5.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.085$	$D_A/\text{Gpc}$	13.9016	$13.906 \pm 0.023$	$\chi_{CMB}^2$	12940.0	$12961.8 \pm 6.9$
$A_{143}^{\text{dust}TE}$	0.153	$0.156 \pm 0.054$	$z_{drag}$	1059.704	$1059.71 \pm 0.32$	$\chi_{BAO}^2$	4.411	$4.83 \pm 0.68$
$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.337 \pm 0.082$	$r_{drag}$	147.419	$147.46 \pm 0.25$			

Best-fit  $\chi^2_{\text{eff}} = 12951.58$ ;  $\Delta\chi^2_{\text{eff}} = -0.00$ ;  $\bar{\chi}^2_{\text{eff}} = 12986.14$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.50$ ;  $R - 1 = 0.02288$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  -0.06) DR11CMASS: 2.49 ( $\Delta$  0.04) DR11LOWZ: 0.68 ( $\Delta$  0.07) CMB - smica\_g30\_ftl\_full\_pp: 9.93 ( $\Delta$  0.25) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_10494.93 ( $\Delta$  -0.28) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.11 ( $\Delta$  -0.19)



18.17 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022312	$0.02233 \pm 0.00015$	$\mathbf{c_{100}}$	0.99820	$0.99811 \pm 0.00077$	$z_{\text{eq}}$	3372.1	$3369 \pm 23$
$\Omega_c h^2$	0.11880	$0.1187 \pm 0.0010$	$\mathbf{c_{217}}$	0.99604	$0.9961 \pm 0.0014$	$k_{\text{eq}}$	0.010292	$0.010283 \pm 0.000070$
$100\theta_{\text{MC}}$	1.040903	$1.04091 \pm 0.00030$	$H_0$	67.724	$67.79 \pm 0.46$	$100\theta_{\text{eq}}$	0.81854	$0.8192 \pm 0.0044$
$\tau$	0.0664	$0.067 \pm 0.012$	$\Omega_{\Lambda}$	0.6909	$0.6918 \pm 0.0061$	$100\theta_{\text{s,eq}}$	0.45216	$0.4525 \pm 0.0022$
$\ln(10^{10} A_s)$	3.0651	$3.066 \pm 0.023$	$\Omega_{\text{m}}$	0.3091	$0.3082 \pm 0.0061$	$r_{\text{drag}}/D_V(0.57)$	0.071710	$0.07176 \pm 0.00034$
$n_s$	0.96659	$0.9669 \pm 0.0041$	$\Omega_{\text{m}} h^2$	0.14175	$0.14163 \pm 0.00096$	$H(0.57)$	93.043	$93.07 \pm 0.22$
$dn_s/d \ln k$	-0.0017	$-0.0051 \pm 0.0073$	$\Omega_{\text{m}} h^3$	0.096002	$0.09601 \pm 0.00031$	$D_A(0.57)$	1386.1	$1385.2 \pm 6.2$
$r$	0.0000	$< 0.0723$	$\sigma_8$	0.8160	$0.8153 \pm 0.0085$	$F_{\text{AP}}(0.57)$	0.67541	$0.6752 \pm 0.0016$
$y_{\text{cal}}$	1.00007	$1.0002 \pm 0.0025$	$\sigma_8 \Omega_{\text{m}}^{0.5}$	0.4536	$0.4526 \pm 0.0059$	$f\sigma_8(0.57)$	0.47381	$0.4732 \pm 0.0049$
$A_{217}^{\text{CIB}}$	67.8	$65.2 \pm 6.6$	$\sigma_8 \Omega_{\text{m}}^{0.25}$	0.6084	$0.6075 \pm 0.0065$	$\sigma_8(0.57)$	0.6076	$0.6073 \pm 0.0068$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8/h^{0.5}$	0.9915	$0.990 \pm 0.010$	$r_{0.002}$	0.0000	$< 0.0691$
$A_{143}^{\text{tSZ}}$	7.29	$5.1 \pm 2.0$	$\langle d^2 \rangle^{1/2}$	2.4519	$2.444 \pm 0.026$	$r_{0.01}$	0.0000	$< 0.0700$
$A_{100}^{\text{PS}}$	257.3	$265 \pm 28$	$z_{\text{re}}$	8.87	$8.9 \pm 1.1$	$\ln(10^{10} A_t)$	-7.13	$-0.24_{-0.61}^{+1.4}$
$A_{143}^{\text{PS}}$	38.8	$45 \pm 8$	$10^9 A_s$	2.144	$2.147 \pm 0.049$	$r_{10}$	0.0000	$< 0.0354$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39_{-10}^{+10}$	$10^9 A_s e^{-2\tau}$	1.8770	$1.877 \pm 0.011$	$10^9 A_t$	0.000	$< 0.155$
$A_{217}^{\text{PS}}$	96.6	$96 \pm 10$	$D_{40}$	1225.1	$1236_{-23}^{+20}$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.136$
$A^{\text{kSZ}}$	0.00	$< 4.92$	$D_{220}$	5726.0	$5721 \pm 39$	$f_{2000}^{143}$	29.81	$30.8 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.55	$7.5 \pm 1.9$	$D_{810}$	2534.4	$2535 \pm 14$	$f_{2000}^{143 \times 217}$	32.56	$33.1 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.06	$9.1 \pm 1.8$	$D_{1420}$	814.82	$814.2 \pm 5.0$	$f_{2000}^{217}$	106.10	$106.6 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.3 \pm 4.2$	$D_{2000}$	230.07	$229.7 \pm 1.8$	$\chi_{\text{lensing}}^2$	9.87	$10.4 \pm 1.9$
$A_{217}^{\text{dustTT}}$	81.6	$81.6 \pm 7.4$	$n_{\text{s},0.002}$	0.9722	$0.983 \pm 0.023$	$\chi_{\text{lowTEB}}^2$	10494.70	$10496.3 \pm 2.5$
$A_{100}^{\text{dustEE}}$	0.0817	$0.0812 \pm 0.0057$	$Y_{\text{P}}$	0.245367	$0.245373 \pm 0.000067$	$\chi_{\text{plik}}^2$	2435.6	$2455.1 \pm 6.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.0494	$0.0489 \pm 0.0050$	$Y_{\text{P}}^{\text{BBN}}$	0.246694	$0.246700 \pm 0.000067$	$\chi_{\text{H070p6}}^2$	0.749	$0.73 \pm 0.23$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.100 \pm 0.033$	$10^5 \text{D}/\text{H}$	2.6023	$2.599 \pm 0.028$	$\chi_{\text{JLA}}^2$	706.683	$706.69 \pm 0.15$
$A_{143}^{\text{dustEE}}$	0.1008	$0.1001 \pm 0.0068$	$\text{Age}/\text{Gyr}$	13.7987	$13.796 \pm 0.022$	$\chi_{6\text{DF}}^2$	0.0155	$0.036 \pm 0.049$
$A_{143 \times 217}^{\text{dustEE}}$	0.2234	$0.223 \pm 0.047$	$z_*$	1089.887	$1089.86 \pm 0.24$	$\chi_{\text{MGS}}^2$	1.343	$1.46 \pm 0.46$
$A_{217}^{\text{dustEE}}$	0.650	$0.65 \pm 0.13$	$r_*$	144.787	$144.81 \pm 0.24$	$\chi_{\text{DR11CMass}}^2$	2.426	$2.70 \pm 0.41$
$A_{100}^{\text{dustTE}}$	0.1405	$0.142 \pm 0.038$	$100\theta_*$	1.041098	$1.04110 \pm 0.00029$	$\chi_{\text{DR11LOWZ}}^2$	0.545	$0.57 \pm 0.43$
$A_{100 \times 143}^{\text{dustTE}}$	0.1323	$0.132 \pm 0.029$	$D_A/\text{Gpc}$	13.9072	$13.909 \pm 0.023$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.6$
$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.085$	$z_{\text{drag}}$	1059.704	$1059.74 \pm 0.32$	$\chi_{\text{CMB}}^2$	12940.1	$12961.9 \pm 6.9$
$A_{143}^{\text{dustTE}}$	0.156	$0.156 \pm 0.054$	$r_{\text{drag}}$	147.476	$147.50 \pm 0.25$	$\chi_{\text{BAO}}^2$	4.330	$4.78 \pm 0.61$
$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.337 \pm 0.082$	$k_{\text{D}}$	0.140417	$0.14041 \pm 0.00031$			
$A_{217}^{\text{dustTE}}$	1.655	$1.66 \pm 0.25$	$100\theta_{\text{D}}$	0.160876	$0.16086 \pm 0.00019$			

Best-fit  $\chi^2_{\text{eff}} = 13659.04$ ;  $\Delta\chi^2_{\text{eff}} = -0.01$ ;  $\bar{\chi}^2_{\text{eff}} = 13693.57$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 2.46$ ;  $R - 1 = 0.02159$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.55 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.87 ( $\Delta$  0.12) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_10494.70 ( $\Delta$  -0.52) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.56 ( $\Delta$  0.37) Hubble - H070p6: 0.75 ( $\Delta$  0.03) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)



## 18.18 base\_nrun\_r\_plikHM\_TTTEE\_lowTEB\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02230 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	$0.157 \pm 0.054$	$100\theta_*$	$1.04106 \pm 0.00031$
$\Omega_c h^2$	$0.1190 \pm 0.0013$	$A_{143 \times 217}^{\text{dust}TE}$	$0.337 \pm 0.082$	$D_A/\text{Gpc}$	$13.904 \pm 0.028$
$100\theta_{\text{MC}}$	$1.04087 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.25$	$z_{\text{drag}}$	$1059.71 \pm 0.33$
$\tau$	$0.066^{+0.011}_{-0.015}$	$c_{100}$	$0.99811 \pm 0.00077$	$r_{\text{drag}}$	$147.44 \pm 0.29$
$\ln(10^{10} A_s)$	$3.065^{+0.021}_{-0.027}$	$c_{217}$	$0.9961 \pm 0.0014$	$k_D$	$0.14045 \pm 0.00033$
$n_s$	$0.9662 \pm 0.0046$	$H_0$	$67.65 \pm 0.61$	$100\theta_D$	$0.16088 \pm 0.00019$
$dn_s/d \ln k$	$-0.0050 \pm 0.0073$	$\Omega_\Lambda$	$0.6898 \pm 0.0081$	$z_{\text{eq}}$	$3376 \pm 30$
$r$	$< 0.0718$	$\Omega_m$	$0.3102 \pm 0.0081$	$k_{\text{eq}}$	$0.010303 \pm 0.000091$
$y_{\text{cal}}$	$1.0001 \pm 0.0025$	$\Omega_m h^2$	$0.1419 \pm 0.0012$	$100\theta_{\text{eq}}$	$0.8179 \pm 0.0057$
$A_{217}^{\text{CIB}}$	$65.3 \pm 6.6$	$\Omega_m h^3$	$0.09600 \pm 0.00031$	$100\theta_{s,\text{eq}}$	$0.4518 \pm 0.0029$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.8155^{+0.0076}_{-0.0089}$	$r_{\text{drag}}/D_V(0.57)$	$0.07166 \pm 0.00045$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	$0.4541 \pm 0.0069$	$H(0.57)$	$93.02^{+0.26}_{-0.29}$
$A_{100}^{\text{PS}}$	$265 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	$0.6085 \pm 0.0066$	$D_A(0.57)$	$1387.1 \pm 8.1$
$A_{143}^{\text{PS}}$	$45 \pm 8$	$\sigma_8/h^{0.5}$	$0.991 \pm 0.010$	$F_{\text{AP}}(0.57)$	$0.6757 \pm 0.0021$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.446 \pm 0.026$	$f\sigma_8(0.57)$	$0.4737 \pm 0.0048$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$z_{\text{re}}$	$8.8^{+1.1}_{-1.3}$	$\sigma_8(0.57)$	$0.6070^{+0.0061}_{-0.0075}$
$A^{\text{kSZ}}$	$< 4.94$	$10^9 A_s$	$2.143^{+0.043}_{-0.058}$	$r_{0.002}$	$< 0.0685$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.878 \pm 0.012$	$r_{0.01}$	$< 0.0696$
$A_{143}^{\text{dust}TT}$	$9.1 \pm 1.8$	$D_{40}$	$1237^{+20}_{-23}$	$\ln(10^{10} A_t)$	$-0.25^{+1.4}_{-0.61}$
$A_{143 \times 217}^{\text{dust}TT}$	$17.3 \pm 4.2$	$D_{220}$	$5719 \pm 39$	$r_{10}$	$< 0.0351$
$A_{217}^{\text{dust}TT}$	$81.5 \pm 7.4$	$D_{810}$	$2535 \pm 14$	$10^9 A_t$	$< 0.154$
$A_{100}^{\text{dust}EE}$	$0.0811 \pm 0.0057$	$D_{1420}$	$814.0 \pm 5.0$	$10^9 A_t e^{-2\tau}$	$< 0.135$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0488 \pm 0.0051$	$D_{2000}$	$229.6 \pm 1.8$	$f_{2000}^{143}$	$30.9 \pm 3.0$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0998 \pm 0.033$	$n_{s,0.002}$	$0.982 \pm 0.023$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.1$
$A_{143}^{\text{dust}EE}$	$0.1000 \pm 0.0069$	$Y_P$	$0.245362 \pm 0.000073$	$f_{2000}^{217}$	$106.6 \pm 2.0$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	$0.246689 \pm 0.000073$	$\chi_{\text{lensing}}^2$	$10.6 \pm 2.0$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$10^5 \text{D/H}$	$2.604 \pm 0.031$	$\chi_{\text{lowTEB}}^2$	$10496.4 \pm 2.5$
$A_{100}^{\text{dust}TE}$	$0.142 \pm 0.038$	$\text{Age/Gyr}$	$13.801 \pm 0.025$	$\chi_{\text{plik}}^2$	$2455.1 \pm 7.0$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$z_*$	$1089.91 \pm 0.29$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.6$
$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	$r_*$	$144.75 \pm 0.30$	$\chi_{\text{CMB}}^2$	$12962.1 \pm 6.9$

$$\bar{\chi}_{\text{eff}}^2 = 12981.52; \Delta\bar{\chi}_{\text{eff}}^2 = 2.60; R - 1 = 0.01928$$

### 18.19 base\_nrun\_r\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022284	$0.02235 \pm 0.00025$	$\Omega_m h^2$	0.14297	$0.1429 \pm 0.0020$	$k_D$	0.14071	$0.14079 \pm 0.00055$
$\Omega_c h^2$	0.12004	$0.1199 \pm 0.0021$	$\Omega_m h^3$	0.09613	$0.09625 \pm 0.00051$	$100\theta_D$	0.160862	$0.16079 \pm 0.00030$
$100\theta_{MC}$	1.040838	$1.04089 \pm 0.00048$	$\sigma_8$	0.8287	$0.828 \pm 0.011$	$z_{eq}$	3401.2	$3398 \pm 48$
$\tau$	0.0767	$0.078^{+0.012}_{-0.014}$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.465 \pm 0.013$	$k_{eq}$	0.010381	$0.01037 \pm 0.00015$
$\ln(10^{10} A_s)$	3.0896	$3.092^{+0.025}_{-0.029}$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.620 \pm 0.012$	$100\theta_{eq}$	0.8132	$0.8140 \pm 0.0089$
$n_s$	0.9641	$0.9646 \pm 0.0059$	$\sigma_8/h^{0.5}$	1.0106	$1.009 \pm 0.018$	$100\theta_{s,eq}$	0.44938	$0.4498 \pm 0.0046$
$dn_s/d \ln k$	-0.0060	$-0.0104 \pm 0.0084$	$\langle d^2 \rangle^{1/2}$	2.4903	$2.480 \pm 0.041$	$r_{drag}/D_V(0.57)$	0.07131	$0.07140 \pm 0.00071$
$r$	0.0000	$< 0.0628$	$z_{re}$	9.86	$9.9 \pm 1.2$	$H(0.57)$	92.879	$92.97 \pm 0.41$
$y_{cal}$	1.00032	$1.0004 \pm 0.0025$	$10^9 A_s$	2.197	$2.203^{+0.054}_{-0.065}$	$D_A(0.57)$	1392.3	$1390 \pm 13$
$A_{217}^{CIB}$	68.0	$65.3 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8843	$1.885 \pm 0.014$	$F_{AP}(0.57)$	0.67723	$0.6769 \pm 0.0033$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1223.9	$1231 \pm 22$	$f\sigma_8(0.57)$	0.4830	$0.4822 \pm 0.0084$
$A_{143}^{tSZ}$	6.96	$4.8 \pm 2.0$	$D_{220}$	5717.7	$5715 \pm 41$	$\sigma_8(0.57)$	0.6153	$0.6153^{+0.0074}_{-0.0085}$
$A_{100}^{PS}$	257.2	$263 \pm 28$	$D_{810}$	2536.8	$2538 \pm 14$	$r_{0.002}$	0.0000	$< 0.0608$
$A_{143}^{PS}$	41.1	$46 \pm 8$	$D_{1420}$	813.8	$813.4 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0610$
$A_{143 \times 217}^{PS}$	33.5	$39^{+9}_{-10}$	$D_{2000}$	229.75	$229.5 \pm 1.9$	$\ln(10^{10} A_t)$	-7.64	$-0.35^{+1.4}_{-0.65}$
$A_{217}^{PS}$	97.2	$96 \pm 10$	$n_{s,0.002}$	0.9833	$0.998 \pm 0.027$	$r_{10}$	0.0000	$< 0.0312$
$A^{kSZ}$	0.13	$< 5.48$	$Y_P$	0.245355	$0.24538 \pm 0.00011$	$10^9 A_t$	0.000	$< 0.138$
$A_{100}^{dustTT}$	7.43	$7.5 \pm 1.9$	$Y_P^{BBN}$	0.246681	$0.24671 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.118$
$A_{143}^{dustTT}$	9.06	$9.1 \pm 1.8$	$10^5 D/H$	2.6075	$2.595 \pm 0.047$	$f_{2000}^{143}$	30.78	$31.5 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	17.79	$17.2 \pm 4.2$	$Age/Gyr$	13.8089	$13.799 \pm 0.039$	$f_{2000}^{143 \times 217}$	33.18	$33.5 \pm 2.2$
$A_{217}^{dustTT}$	82.0	$81.7 \pm 7.4$	$z_*$	1090.032	$1089.93 \pm 0.43$	$f_{2000}^{217}$	106.70	$107.0 \pm 2.1$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$r_*$	144.486	$144.48 \pm 0.48$	$\chi_{WMAPTEB}^2$	19732.72	$19735.0 \pm 3.0$
$c_{217}$	0.99605	$0.9961 \pm 0.0015$	$100\theta_*$	1.041025	$1.04108 \pm 0.00047$	$\chi_{plik}^2$	764.8	$779.8 \pm 6.0$
$H_0$	67.24	$67.39 \pm 0.94$	$D_A/Gpc$	13.8791	$13.878 \pm 0.045$	$\chi_{prior}^2$	1.99	$7.4 \pm 3.5$
$\Omega_\Lambda$	0.6838	$0.685 \pm 0.013$	$z_{drag}$	1059.74	$1059.88 \pm 0.52$	$\chi_{CMB}^2$	20497.5	$20514.8 \pm 6.0$
$\Omega_m$	0.3162	$0.315 \pm 0.013$	$r_{drag}$	147.175	$147.15 \pm 0.49$			

Best-fit  $\chi_{eff}^2 = 20499.51$ ;  $\Delta\chi_{eff}^2 = -0.64$ ;  $\bar{\chi}_{eff}^2 = 20522.23$ ;  $\Delta\bar{\chi}_{eff}^2 = 2.09$ ;  $R - 1 = 0.01420$

$\chi_{eff}^2$ : CMB - bflike-WMAP353ggf\_LFI312\_nw8: 19732.72 ( $\Delta$  -1.43) plik\_dx11dr2\_HM\_v18\_TT: 764.80 ( $\Delta$  0.73)

## 18.20 base\_nrun\_r\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02238 \pm 0.00024$	$\Omega_m h^2$	$0.1411 \pm 0.0016$	$k_D$	$0.14034 \pm 0.00047$
$\Omega_c h^2$	$0.1181 \pm 0.0017$	$\Omega_m h^3$	$0.09610 \pm 0.00049$	$100\theta_D$	$0.16084 \pm 0.00029$
$100\theta_{MC}$	$1.04112 \pm 0.00045$	$\sigma_8$	$0.8161 \pm 0.0076$	$z_{eq}$	$3356 \pm 37$
$\tau$	$0.071^{+0.011}_{-0.013}$	$\sigma_8 \Omega_m^{0.5}$	$0.4501 \pm 0.0087$	$k_{eq}$	$0.01024 \pm 0.00011$
$\ln(10^{10} A_s)$	$3.073^{+0.021}_{-0.023}$	$\sigma_8 \Omega_m^{0.25}$	$0.6061 \pm 0.0077$	$100\theta_{eq}$	$0.8219 \pm 0.0073$
$n_s$	$0.9688 \pm 0.0052$	$\sigma_8/h^{0.5}$	$0.989 \pm 0.011$	$100\theta_{s,eq}$	$0.4538 \pm 0.0037$
$dn_s/d \ln k$	$-0.0069 \pm 0.0082$	$\langle d^2 \rangle^{1/2}$	$2.437 \pm 0.028$	$r_{drag}/D_V(0.57)$	$0.07200 \pm 0.00058$
$r$	$< 0.0663$	$z_{re}$	$9.2 \pm 1.0$	$H(0.57)$	$93.23^{+0.36}_{-0.41}$
$y_{cal}$	$1.0002 \pm 0.0025$	$10^9 A_s$	$2.161^{+0.044}_{-0.051}$	$D_A(0.57)$	$1381 \pm 11$
$A_{217}^{CIB}$	$65.1 \pm 6.7$	$10^9 A_s e^{-2\tau}$	$1.874 \pm 0.012$	$F_{AP}(0.57)$	$0.6742 \pm 0.0026$
$\xi^{tSZ \times CIB}$	—	$D_{40}$	$1227 \pm 22$	$f\sigma_8(0.57)$	$0.4725 \pm 0.0052$
$A_{143}^{tSZ}$	$4.9 \pm 2.0$	$D_{220}$	$5716 \pm 40$	$\sigma_8(0.57)$	$0.6089 \pm 0.0061$
$A_{100}^{PS}$	$263 \pm 28$	$D_{810}$	$2534 \pm 14$	$r_{0.002}$	$< 0.0643$
$A_{143}^{PS}$	$45^{+9}_{-8}$	$D_{1420}$	$814.2 \pm 5.3$	$r_{0.01}$	$< 0.0644$
$A_{143 \times 217}^{PS}$	$38^{+9}_{-10}$	$D_{2000}$	$229.7^{+1.9}_{-2.1}$	$\ln(10^{10} A_t)$	$-0.34^{+1.5}_{-0.63}$
$A_{217}^{PS}$	$95 \pm 10$	$n_{s,0.002}$	$0.991 \pm 0.027$	$r_{10}$	$< 0.0330$
$A^{kSZ}$	$< 5.45$	$Y_P$	$0.24540 \pm 0.00011$	$10^9 A_t$	$< 0.143$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P^{BBN}$	$0.24672 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	$< 0.124$
$A_{143}^{dustTT}$	$9.1 \pm 1.8$	$10^5 D/H$	$2.590 \pm 0.045$	$f_{2000}^{143}$	$31.1 \pm 3.1$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.0$	$Age/Gyr$	$13.782 \pm 0.037$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.2$
$A_{217}^{dustTT}$	$81.6 \pm 7.1$	$z_*$	$1089.74 \pm 0.40$	$f_{2000}^{217}$	$106.7 \pm 2.1$
$c_{100}$	$0.99788 \pm 0.00080$	$r_*$	$144.93 \pm 0.38$	$\chi_{lensing}^2$	$10.2 \pm 1.7$
$c_{217}$	$0.9960 \pm 0.0014$	$100\theta_*$	$1.04130 \pm 0.00044$	$\chi_{WMAPTEB}^2$	$19734.5 \pm 2.8$
$H_0$	$68.12 \pm 0.79$	$D_A/Gpc$	$13.918 \pm 0.036$	$\chi_{plik}^2$	$781 \pm 14$
$\Omega_\Lambda$	$0.696 \pm 0.010$	$z_{drag}$	$1059.82^{+0.50}_{-0.56}$	$\chi_{prior}^2$	$7.4 \pm 3.5$
$\Omega_m$	$0.304 \pm 0.010$	$r_{drag}$	$147.59 \pm 0.39$	$\chi_{CMB}^2$	$20530 \pm 14$

$$\bar{\chi}_{eff}^2 = 20533.29; \Delta\bar{\chi}_{eff}^2 = 2.54; R - 1 = 0.02821$$

## 18.21 base\_nrun\_r\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02240 \pm 0.00022$	$\sigma_8$	$0.827 \pm 0.011$	$100\theta_{\text{eq}}$	$0.8171 \pm 0.0054$
$\Omega_c h^2$	$0.1191 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	$0.4604 \pm 0.0091$	$100\theta_{s,\text{eq}}$	$0.4513 \pm 0.0028$
$100\theta_{\text{MC}}$	$1.04099 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	$0.6168 \pm 0.0097$	$r_{\text{drag}}/D_V(0.57)$	$0.07164 \pm 0.00042$
$\tau$	$0.079^{+0.013}_{-0.014}$	$\sigma_8/h^{0.5}$	$1.005 \pm 0.015$	$H(0.57)$	$93.10 \pm 0.28$
$\ln(10^{10} A_s)$	$3.093^{+0.025}_{-0.029}$	$\langle d^2 \rangle^{1/2}$	$2.471 \pm 0.034$	$D_A(0.57)$	$1386.0 \pm 7.7$
$n_s$	$0.9663 \pm 0.0045$	$z_{\text{re}}$	$10.0 \pm 1.2$	$F_{\text{AP}}(0.57)$	$0.6757 \pm 0.0019$
$dn_s/d \ln k$	$-0.0103 \pm 0.0085$	$10^9 A_s$	$2.205^{+0.055}_{-0.066}$	$f\sigma_8(0.57)$	$0.4802 \pm 0.0071$
$r$	$< 0.0645$	$10^9 A_s e^{-2\tau}$	$1.882 \pm 0.012$	$\sigma_8(0.57)$	$0.6152^{+0.0074}_{-0.0087}$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$D_{40}$	$1228^{+21}_{-23}$	$r_{0.002}$	$< 0.0629$
$A_{217}^{\text{CIB}}$	$65.2 \pm 6.7$	$D_{220}$	$5719 \pm 41$	$r_{0.01}$	$< 0.0629$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{810}$	$2537 \pm 14$	$\ln(10^{10} A_t)$	$-0.32^{+1.4}_{-0.64}$
$A_{143}^{\text{tSZ}}$	$4.8 \pm 2.0$	$D_{1420}$	$813.8 \pm 5.1$	$r_{10}$	$< 0.0322$
$A_{100}^{\text{PS}}$	$264 \pm 28$	$D_{2000}$	$229.6 \pm 1.9$	$10^9 A_t$	$< 0.142$
$A_{143}^{\text{PS}}$	$45^{+9}_{-8}$	$n_{s,0.002}$	$0.999 \pm 0.027$	$10^9 A_t e^{-2\tau}$	$< 0.122$
$A_{143 \times 217}^{\text{PS}}$	$38^{+9}_{-10}$	$Y_{\text{P}}$	$0.24540 \pm 0.00010$	$f_{2000}^{143}$	$31.3 \pm 3.1$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$Y_{\text{P}}^{\text{BBN}}$	$0.24673 \pm 0.00010$	$f_{2000}^{143 \times 217}$	$33.4 \pm 2.2$
$A^{\text{kSZ}}$	$< 5.44$	$10^5 \text{D}/\text{H}$	$2.587 \pm 0.042$	$f_{2000}^{217}$	$106.9 \pm 2.1$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$\text{Age}/\text{Gyr}$	$13.789 \pm 0.030$	$\chi_{\text{WMAPTEB}}^2$	$19734.9 \pm 3.0$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.8$	$z_*$	$1089.82 \pm 0.32$	$\chi_{\text{plik}}^2$	$780 \pm 14$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3 \pm 4.1$	$r_*$	$144.64 \pm 0.33$	$\chi_{6\text{DF}}^2$	$0.063 \pm 0.081$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.3$	$100\theta_*$	$1.04117 \pm 0.00042$	$\chi_{\text{MGS}}^2$	$1.33 \pm 0.53$
$c_{100}$	$0.99790 \pm 0.00080$	$D_A/\text{Gpc}$	$13.892 \pm 0.033$	$\chi_{\text{DR11CMass}}^2$	$2.91 \pm 0.70$
$c_{217}$	$0.9961 \pm 0.0014$	$z_{\text{drag}}$	$1059.93 \pm 0.50$	$\chi_{\text{DR11LOWZ}}^2$	$0.77 \pm 0.61$
$H_0$	$67.71 \pm 0.57$	$r_{\text{drag}}$	$147.29 \pm 0.37$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$\Omega_\Lambda$	$0.6898 \pm 0.0075$	$k_{\text{D}}$	$0.14067 \pm 0.00049$	$\chi_{\text{CMB}}^2$	$20510 \pm 14$
$\Omega_m$	$0.3102 \pm 0.0075$	$100\theta_{\text{D}}$	$0.16077 \pm 0.00029$	$\chi_{\text{BAO}}^2$	$5.1 \pm 1.0$
$\Omega_m h^2$	$0.1422 \pm 0.0012$	$z_{\text{eq}}$	$3382 \pm 30$		
$\Omega_m h^3$	$0.09625 \pm 0.00051$	$k_{\text{eq}}$	$0.010323 \pm 0.000090$		

$$\bar{\chi}_{\text{eff}}^2 = 20527.01; \Delta\bar{\chi}_{\text{eff}}^2 = 2.12; R - 1 = 0.01835$$

## 19 omegak

### 19.1 base\_omegak\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022505	$0.02257 \pm 0.00026$	$\Omega_m$	0.441	$0.510^{+0.073}_{-0.12}$	$D_A/\text{Gpc}$	13.9124	$13.918 \pm 0.046$
$\Omega_c h^2$	0.11794	$0.1175 \pm 0.0023$	$\Omega_m h^2$	0.14109	$0.1407 \pm 0.0022$	$z_{\text{drag}}$	1060.09	$1060.21 \pm 0.52$
$100\theta_{\text{MC}}$	1.04109	$1.04122 \pm 0.00051$	$\Omega_m h^3$	0.0798	$0.0749 \pm 0.0074$	$r_{\text{drag}}$	147.491	$147.54 \pm 0.49$
$\tau$	0.0700	$0.058 \pm 0.022$	$\sigma_8$	0.7968	$0.776^{+0.032}_{-0.027}$	$k_D$	0.14055	$0.14053 \pm 0.00051$
$\Omega_K$	-0.0330	$-0.052^{+0.032}_{-0.018}$	$\sigma_8 \Omega_m^{0.5}$	0.5293	$0.550 \pm 0.035$	$100\theta_D$	0.160667	$0.16062 \pm 0.00028$
$\ln(10^{10} A_s)$	3.0697	$3.045 \pm 0.043$	$\sigma_8 \Omega_m^{0.25}$	0.6494	$0.652^{+0.017}_{-0.014}$	$z_{\text{eq}}$	3356	$3347 \pm 52$
$n_s$	0.9711	$0.9717 \pm 0.0066$	$\sigma_8/h^{0.5}$	1.0597	$1.065^{+0.027}_{-0.023}$	$k_{\text{eq}}$	0.010243	$0.01021 \pm 0.00016$
$y_{\text{cal}}$	1.00004	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.648	$2.683 \pm 0.080$	$100\theta_{\text{eq}}$	0.8221	$0.824 \pm 0.010$
$A_{217}^{\text{CIB}}$	63.2	$61.4 \pm 6.7$	$z_{\text{re}}$	9.03	$7.7^{+2.5}_{-2.1}$	$100\theta_{\text{s,eq}}$	0.4539	$0.4549 \pm 0.0052$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.311	$> 0.387$	$10^9 A_s$	2.154	$2.104^{+0.087}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.06327	$0.0609^{+0.0036}_{-0.0040}$
$A_{143}^{\text{tSZ}}$	7.15	$5.6^{+2.1}_{-1.8}$	$10^9 A_s e^{-2\tau}$	1.8722	$1.872 \pm 0.014$	$H(0.57)$	84.23	$81.8^{+3.6}_{-4.2}$
$A_{100}^{\text{PS}}$	244.2	$248 \pm 30$	$D_{40}$	1212.8	$1208 \pm 18$	$D_A(0.57)$	1592	$1671^{+110}_{-130}$
$A_{143}^{\text{PS}}$	38.3	$38 \pm 8$	$D_{220}$	5732.8	$5748 \pm 42$	$F_{\text{AP}}(0.57)$	0.7020	$0.713^{+0.014}_{-0.019}$
$A_{143 \times 217}^{\text{PS}}$	38.2	$37 \pm 10$	$D_{810}$	2529.6	$2530 \pm 14$	$f\sigma_8(0.57)$	0.4913	$0.485^{+0.011}_{-0.0096}$
$A_{217}^{\text{PS}}$	99.8	$98 \pm 10$	$D_{1420}$	814.0	$814.0 \pm 5.1$	$\sigma_8(0.57)$	0.5654	$0.541^{+0.036}_{-0.033}$
$A^{\text{kSZ}}$	0.00	$< 3.40$	$D_{2000}$	232.22	$232.5 \pm 2.0$	$f_{2000}^{143}$	26.76	$27 \pm 3$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9711	$0.9717 \pm 0.0066$	$f_{2000}^{143 \times 217}$	29.99	$29.5 \pm 2.3$
$A_{143}^{\text{dustTT}}$	9.04	$8.9 \pm 1.9$	$Y_{\text{P}}$	0.245452	$0.24548 \pm 0.00012$	$f_{2000}^{217}$	103.70	$103.4 \pm 2.2$
$A_{143 \times 217}^{\text{dustTT}}$	17.61	$16.6 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246779	$0.24681 \pm 0.00012$	$\chi_{\text{lowTEB}}^2$	10493.74	$10494.8 \pm 1.4$
$A_{217}^{\text{dustTT}}$	82.1	$81.4 \pm 7.3$	$10^5 D/H$	2.5661	$2.555 \pm 0.048$	$\chi_{\text{plik}}^2$	759.9	$774.7 \pm 5.5$
$c_{100}$	0.99795	$0.99794 \pm 0.00078$	Age/Gyr	15.03	$15.49^{+0.64}_{-0.73}$	$\chi_{\text{prior}}^2$	1.83	$7.1 \pm 3.5$
$c_{217}$	0.99561	$0.9956 \pm 0.0015$	$z_*$	1089.571	$1089.46 \pm 0.48$	$\chi_{\text{CMB}}^2$	11253.6	$11269.5 \pm 5.6$
$H_0$	56.5	$53.2 \pm 5.1$	$r_*$	144.86	$144.94 \pm 0.50$			
$\Omega_\Lambda$	0.592	$0.542^{+0.086}_{-0.055}$	$100\theta_*$	1.041261	$1.04138 \pm 0.00049$			

Best-fit  $\chi_{\text{eff}}^2 = 11255.46$ ;  $\Delta\chi_{\text{eff}}^2 = -6.46$ ;  $\bar{\chi}_{\text{eff}}^2 = 11276.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.26$ ;  $R - 1 = 0.02296$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.74 ( $\Delta$  -2.73) plik\_dx11dr2\_HM\_v18\_TT: 759.89 ( $\Delta$  -3.48)

## 19.2 base\_omegak\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022425	$0.02242 \pm 0.00017$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.302 \pm 0.085$	Age/Gyr	15.04	$15.19 \pm 0.56$
$\Omega_c h^2$	0.11849	$0.1185 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.153	$0.154 \pm 0.054$	$z_*$	1089.719	$1089.72 \pm 0.32$
$100\theta_{\text{MC}}$	1.040926	$1.04096 \pm 0.00033$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.335 \pm 0.080$	$r_*$	144.781	$144.80 \pm 0.32$
$\tau$	0.0583	$0.054 \pm 0.021$	$A_{217}^{\text{dust}TE}$	1.653	$1.65 \pm 0.25$	$100\theta_*$	1.041100	$1.04114 \pm 0.00032$
$\Omega_K$	-0.0329	$-0.040_{-0.016}^{+0.024}$	$c_{100}$	0.99827	$0.99821 \pm 0.00077$	$D_A/\text{Gpc}$	13.9066	$13.908_{-0.029}^{+0.032}$
$\ln(10^{10} A_s)$	3.0487	$3.039 \pm 0.041$	$c_{217}$	0.99564	$0.9957 \pm 0.0014$	$z_{\text{drag}}$	1059.971	$1059.94 \pm 0.33$
$n_s$	0.96816	$0.9680 \pm 0.0048$	$H_0$	56.38	$55.3_{-5.0}^{+4.3}$	$r_{\text{drag}}$	147.430	$147.45 \pm 0.31$
$y_{\text{cal}}$	0.99981	$0.99996 \pm 0.0025$	$\Omega_\Lambda$	0.588	$0.568_{-0.049}^{+0.066}$	$k_D$	0.140550	$0.14052 \pm 0.00033$
$A_{217}^{\text{CIB}}$	62.1	$62.1 \pm 6.6$	$\Omega_m$	0.445	$0.472_{-0.090}^{+0.064}$	$100\theta_D$	0.160731	$0.16075 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.539	$> 0.405$	$\Omega_m h^2$	0.14156	$0.1415 \pm 0.0014$	$z_{\text{eq}}$	3367.4	$3366 \pm 34$
$A_{143}^{\text{tSZ}}$	6.87	$5.7_{-1.8}^{+2.0}$	$\Omega_m h^3$	0.0798	$0.0783_{-0.0073}^{+0.0063}$	$k_{\text{eq}}$	0.010278	$0.01027 \pm 0.00010$
$A_{100}^{\text{PS}}$	247.2	$252 \pm 27$	$\sigma_8$	0.7896	$0.782 \pm 0.025$	$100\theta_{\text{eq}}$	0.8197	$0.8200 \pm 0.0065$
$A_{143}^{\text{PS}}$	43.3	$40 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.5269	$0.534 \pm 0.029$	$100\theta_{\text{s,eq}}$	0.45269	$0.4528 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	46.1	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6450	$0.646_{-0.012}^{+0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.06317	$0.0624_{-0.0037}^{+0.0031}$
$A_{217}^{\text{PS}}$	103.2	$98 \pm 11$	$\sigma_8/h^{0.5}$	1.0516	$1.053_{-0.019}^{+0.022}$	$H(0.57)$	84.20	$83.4_{-3.8}^{+3.1}$
$A^{\text{kSZ}}$	0.00	$< 3.31$	$\langle d^2 \rangle^{1/2}$	2.631	$2.642 \pm 0.065$	$D_A(0.57)$	1594	$1622 \pm 96$
$A_{100}^{\text{dust}TT}$	7.35	$7.5 \pm 1.8$	$z_{\text{re}}$	7.94	$7.3_{-2.0}^{+2.5}$	$F_{\text{AP}}(0.57)$	0.7029	$0.707_{-0.015}^{+0.013}$
$A_{143}^{\text{dust}TT}$	8.90	$8.8 \pm 1.8$	$10^9 A_s$	2.109	$2.090_{-0.098}^{+0.083}$	$f\sigma_8(0.57)$	0.4872	$0.4843 \pm 0.0086$
$A_{143 \times 217}^{\text{dust}TT}$	17.66	$16.6 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8767	$1.876 \pm 0.012$	$\sigma_8(0.57)$	0.5595	$0.551 \pm 0.029$
$A_{217}^{\text{dust}TT}$	82.0	$81.2 \pm 7.4$	$D_{40}$	1217.0	$1216 \pm 15$	$f_{2000}^{143}$	26.99	$27.4 \pm 2.8$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0817 \pm 0.0056$	$D_{220}$	5741.8	$5743 \pm 39$	$f_{2000}^{143 \times 217}$	30.41	$30.4 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.04923	$0.0493 \pm 0.0050$	$D_{810}$	2532.5	$2531 \pm 14$	$f_{2000}^{217}$	103.89	$104.2 \pm 2.0$
$A_{100 \times 217}^{\text{dust}EE}$	0.0987	$0.099 \pm 0.032$	$D_{1420}$	813.82	$813.3 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	10493.88	$10495.0 \pm 1.3$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1007 \pm 0.0069$	$D_{2000}$	231.70	$231.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2428.5	$2448.1 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.224 \pm 0.047$	$n_{\text{s},0.002}$	0.96816	$0.9680 \pm 0.0048$	$\chi_{\text{prior}}^2$	6.5	$19.2 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P$	0.245417	$0.245414 \pm 0.000076$	$\chi_{\text{CMB}}^2$	12922.4	$12943.1 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1407	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246744	$0.246740 \pm 0.000076$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1312	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.5810	$2.582 \pm 0.032$			

Best-fit  $\chi_{\text{eff}}^2 = 12928.92$ ;  $\Delta\chi_{\text{eff}}^2 = -6.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 12962.34$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -5.35$ ;  $R - 1 = 0.01122$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.88 ( $\Delta$  -3.05) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2428.53 ( $\Delta$  -3.12)

### 19.3 base\_omegak\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02230 \pm 0.00025$	$\Omega_m h^2$	0.14172	$0.1418 \pm 0.0021$	$r_{\text{drag}}$	147.513	$147.47 \pm 0.49$
$\Omega_c h^2$	0.11880	$0.1189 \pm 0.0023$	$\Omega_m h^3$	0.09584	$0.0959 \pm 0.0018$	$k_D$	0.14036	$0.14041 \pm 0.00051$
$100\theta_{\text{MC}}$	1.040978	$1.04098 \pm 0.00050$	$\sigma_8$	0.8277	$0.829 \pm 0.015$	$100\theta_D$	0.160929	$0.16090 \pm 0.00028$
$\tau$	0.0801	$0.081 \pm 0.020$	$\sigma_8 \Omega_m^{0.5}$	0.4608	$0.461 \pm 0.010$	$z_{\text{eq}}$	3371.3	$3374 \pm 51$
$\Omega_K$	-0.00019	$-0.0002 \pm 0.0027$	$\sigma_8 \Omega_m^{0.25}$	0.6176	$0.618 \pm 0.012$	$k_{\text{eq}}$	0.010289	$0.01030 \pm 0.00016$
$\ln(10^{10} A_s)$	3.0920	$3.094 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0065	$1.008 \pm 0.019$	$100\theta_{\text{eq}}$	0.8187	$0.8184 \pm 0.0098$
$n_s$	0.9676	$0.9677 \pm 0.0065$	$\langle d^2 \rangle^{1/2}$	2.4890	$2.491 \pm 0.044$	$100\theta_{s,\text{eq}}$	0.45225	$0.4521 \pm 0.0050$
$y_{\text{cal}}$	1.00038	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.15	$10.1^{+1.9}_{-1.6}$	$r_{\text{drag}}/D_V(0.57)$	0.07165	$0.07164 \pm 0.00055$
$A_{217}^{\text{CIB}}$	67.3	$63.7 \pm 6.6$	$10^9 A_s$	2.202	$2.207 \pm 0.083$	$H(0.57)$	92.96	$92.98 \pm 0.73$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$10^9 A_s e^{-2\tau}$	1.8760	$1.877 \pm 0.014$	$D_A(0.57)$	1387.7	$1388 \pm 12$
$A_{143}^{\text{tSZ}}$	7.11	$5.2 \pm 1.9$	$D_{40}$	1231.8	$1233 \pm 16$	$F_{\text{AP}}(0.57)$	0.67559	$0.6757 \pm 0.0020$
$A_{100}^{\text{PS}}$	254.4	$257 \pm 28$	$D_{220}$	5719.4	$5723 \pm 42$	$f\sigma_8(0.57)$	0.4809	$0.4815 \pm 0.0091$
$A_{143}^{\text{PS}}$	38.9	$43 \pm 8$	$D_{810}$	2533.4	$2534 \pm 14$	$\sigma_8(0.57)$	0.6162	$0.617 \pm 0.012$
$A_{143 \times 217}^{\text{PS}}$	32.4	$39^{+10}_{-10}$	$D_{1420}$	814.7	$815.0 \pm 5.0$	$f_{2000}^{143}$	29.68	$29.6 \pm 3.0$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$D_{2000}$	230.53	$230.6 \pm 1.9$	$f_{2000}^{143 \times 217}$	32.26	$32.1 \pm 2.2$
$A^{\text{kSZ}}$	0.00	$< 4.44$	$n_{s,0.002}$	0.9676	$0.9677 \pm 0.0065$	$f_{2000}^{217}$	105.90	$105.7 \pm 2.1$
$A_{100}^{\text{dustTT}}$	7.43	$7.4 \pm 1.9$	$Y_P$	0.245353	$0.24536 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10496.20	$10497.3 \pm 2.5$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.8$	$Y_P^{\text{BBN}}$	0.246679	$0.24669 \pm 0.00011$	$\chi_{\text{plik}}^2$	763.7	$777.6 \pm 5.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.68	$17.1 \pm 4.2$	$10^5 \text{D/H}$	2.6085	$2.605 \pm 0.047$	$\chi_{6\text{DF}}^2$	0.0221	$0.075 \pm 0.099$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.4$	Age/Gyr	13.809	$13.81 \pm 0.10$	$\chi_{\text{MGS}}^2$	1.28	$1.34 \pm 0.61$
$c_{100}$	0.99793	$0.99788 \pm 0.00078$	$z_*$	1089.931	$1089.91 \pm 0.46$	$\chi_{\text{DR11CMass}}^2$	2.47	$3.2 \pm 1.2$
$c_{217}$	0.99599	$0.9959 \pm 0.0014$	$r_*$	144.812	$144.78 \pm 0.50$	$\chi_{\text{DR11LOWZ}}^2$	0.62	$0.83 \pm 0.75$
$H_0$	67.63	$67.63 \pm 0.72$	$100\theta_*$	1.041165	$1.04117 \pm 0.00049$	$\chi_{\text{prior}}^2$	2.01	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6903	$0.6900 \pm 0.0082$	$D_A/\text{Gpc}$	13.9087	$13.905 \pm 0.046$	$\chi_{\text{CMB}}^2$	11259.9	$11274.8 \pm 5.7$
$\Omega_m$	0.3099	$0.3102 \pm 0.0078$	$z_{\text{drag}}$	1059.628	$1059.69 \pm 0.49$	$\chi_{\text{BAO}}^2$	4.38	$5.4 \pm 1.6$

Best-fit  $\chi_{\text{eff}}^2 = 11266.31$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.59$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.23$ ;  $R - 1 = 0.00885$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.47 ( $\Delta$  0.02) DR11LOWZ: 0.61 ( $\Delta$  0.00) CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.20 ( $\Delta$  -0.22) plik\_dx11dr2\_HM\_v18\_TT: 763.72 ( $\Delta$  0.12)

#### 19.4 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022269	$0.02227 \pm 0.00024$	$\Omega_m h^3$	0.09563	$0.0958 \pm 0.0018$	$100\theta_D$	0.160972	$0.16096 \pm 0.00027$
$\Omega_c h^2$	0.11830	$0.1185 \pm 0.0022$	$\sigma_8$	0.8149	$0.8144 \pm 0.0098$	$z_{\text{eq}}$	3359.1	$3364 \pm 49$
$100\theta_{\text{MC}}$	1.041055	$1.04102 \pm 0.00048$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.4521 \pm 0.0067$	$k_{\text{eq}}$	0.010252	$0.01027 \pm 0.00015$
$\tau$	0.0673	$0.066 \pm 0.015$	$\sigma_8 \Omega_m^{0.25}$	0.6070	$0.6068^{+0.0070}_{-0.0078}$	$100\theta_{\text{eq}}$	0.8209	$0.8201 \pm 0.0094$
$\Omega_K$	-0.00039	$-0.0002 \pm 0.0026$	$\sigma_8/h^{0.5}$	0.9903	$0.989 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45343	$0.4530 \pm 0.0048$
$\ln(10^{10} A_s)$	3.0643	$3.062 \pm 0.026$	$\langle d^2 \rangle^{1/2}$	2.4492	$2.447 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.07175	$0.07175 \pm 0.00055$
$n_s$	0.9686	$0.9678 \pm 0.0063$	$z_{\text{re}}$	8.95	$8.7^{+1.5}_{-1.2}$	$H(0.57)$	92.94	$93.00 \pm 0.74$
$y_{\text{cal}}$	1.00011	$1.0002 \pm 0.0025$	$10^9 A_s$	2.142	$2.137 \pm 0.056$	$D_A(0.57)$	1386.9	$1386 \pm 12$
$A_{217}^{\text{CIB}}$	67.6	$64.5 \pm 6.5$	$10^9 A_s e^{-2\tau}$	1.8721	$1.874 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.67505	$0.6752 \pm 0.0019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.0	$1225 \pm 14$	$f\sigma_8(0.57)$	0.4730	$0.4727 \pm 0.0054$
$A_{143}^{\text{tSZ}}$	7.18	$5.1 \pm 2.0$	$D_{220}$	5713.5	$5719 \pm 42$	$\sigma_8(0.57)$	0.6071	$0.6066 \pm 0.0081$
$A_{100}^{\text{PS}}$	254.8	$260 \pm 28$	$D_{810}$	2531.7	$2532 \pm 14$	$f_{2000}^{143}$	30.07	$30.5 \pm 2.9$
$A_{143}^{\text{PS}}$	39.4	$44 \pm 8$	$D_{1420}$	814.5	$814.6 \pm 5.1$	$f_{2000}^{143 \times 217}$	32.63	$32.7 \pm 2.1$
$A_{143 \times 217}^{\text{PS}}$	32.7	$38^{+10}_{-10}$	$D_{2000}$	230.17	$230.1 \pm 1.9$	$f_{2000}^{217}$	106.14	$106.3 \pm 2.0$
$A_{217}^{\text{PS}}$	96.9	$96 \pm 10$	$n_{\text{s},0.002}$	0.9686	$0.9678 \pm 0.0063$	$\chi^2_{\text{lensing}}$	9.24	$9.9 \pm 1.5$
$A^{\text{kSZ}}$	0.00	$< 4.97$	$Y_{\text{P}}$	0.245348	$0.24535^{+0.00012}_{-0.00011}$	$\chi^2_{\text{lowTEB}}$	10494.74	$10495.5 \pm 1.4$
$A_{100}^{\text{dustTT}}$	7.37	$7.5 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.246675	$0.24667^{+0.00012}_{-0.00011}$	$\chi^2_{\text{plik}}$	766.2	$779.7 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.8$	$10^5 \text{D/H}$	2.6105	$2.611^{+0.044}_{-0.050}$	$\chi^2_{6\text{DF}}$	0.0102	$0.060 \pm 0.084$
$A_{143 \times 217}^{\text{dustTT}}$	17.72	$17.2 \pm 4.2$	Age/Gyr	13.815	$13.81 \pm 0.10$	$\chi^2_{\text{MGS}}$	1.41	$1.49 \pm 0.63$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$z_*$	1089.901	$1089.92 \pm 0.44$	$\chi^2_{\text{DR11CMass}}$	2.43	$3.1 \pm 1.1$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$r_*$	144.951	$144.90^{+0.46}_{-0.51}$	$\chi^2_{\text{DR11LOWZ}}$	0.489	$0.68 \pm 0.67$
$c_{217}$	0.99598	$0.9960 \pm 0.0014$	$100\theta_*$	1.041246	$1.04122 \pm 0.00047$	$\chi^2_{\text{prior}}$	2.07	$7.4 \pm 3.6$
$H_0$	67.72	$67.74 \pm 0.73$	$D_A/\text{Gpc}$	13.9209	$13.916^{+0.042}_{-0.047}$	$\chi^2_{\text{CMB}}$	11270.1	$11285.1 \pm 5.5$
$\Omega_\Lambda$	0.6925	$0.6919 \pm 0.0078$	$z_{\text{drag}}$	1059.589	$1059.60 \pm 0.48$	$\chi^2_{\text{BAO}}$	4.34	$5.4 \pm 1.5$
$\Omega_m$	0.3079	$0.3083 \pm 0.0075$	$r_{\text{drag}}$	147.656	$147.60^{+0.45}_{-0.51}$			
$\Omega_m h^2$	0.14121	$0.1414 \pm 0.0020$	$k_D$	0.14020	$0.14025 \pm 0.00050$			

Best-fit  $\chi^2_{\text{eff}} = 11276.56$ ;  $\Delta\chi^2_{\text{eff}} = -0.18$ ;  $\bar{\chi}^2_{\text{eff}} = 11297.85$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.16$ ;  $R - 1 = 0.02254$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.43 ( $\Delta$  0.03) DR11LOWZ: 0.49 ( $\Delta$  0.01) CMB - smica\_g30\_ftl\_full\_pp: 9.24 ( $\Delta$  -0.00) low1.SMW\_70\_dx11d.2014.10.03.10494.74 ( $\Delta$  -0.12) plik\_dx11dr2\_HM\_v18.TT: 766.17 ( $\Delta$  -0.03)



## 19.5 base\_omegak\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022314	$0.02229 \pm 0.00016$	$A_{143}^{\text{dustTE}}$	0.154	$0.155 \pm 0.054$	$r_*$	144.703	$144.66 \pm 0.33$
$\Omega_c h^2$	0.11912	$0.1194 \pm 0.0015$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.338 \pm 0.080$	$100\theta_*$	1.041020	$1.04102 \pm 0.00032$
$100\theta_{\text{MC}}$	1.040826	$1.04082 \pm 0.00033$	$A_{217}^{\text{dustTE}}$	1.662	$1.66 \pm 0.26$	$D_A/\text{Gpc}$	13.9001	$13.896 \pm 0.030$
$\tau$	0.0855	$0.081 \pm 0.017$	$c_{100}$	0.99821	$0.99817 \pm 0.00077$	$z_{\text{drag}}$	1059.742	$1059.70^{+0.32}_{-0.29}$
$\Omega_K$	-0.00005	$0.0002 \pm 0.0021$	$c_{217}$	0.99589	$0.9959 \pm 0.0015$	$r_{\text{drag}}$	147.388	$147.35 \pm 0.32$
$\ln(10^{10} A_s)$	3.1039	$3.097 \pm 0.032$	$H_0$	67.57	$67.58 \pm 0.70$	$k_D$	0.140512	$0.14053 \pm 0.00033$
$n_s$	0.96692	$0.9657 \pm 0.0049$	$\Omega_\Lambda$	0.6888	$0.6881 \pm 0.0065$	$100\theta_D$	0.160850	$0.16088 \pm 0.00018$
$y_{\text{cal}}$	1.00018	$1.0004 \pm 0.0025$	$\Omega_m$	0.3112	$0.3117 \pm 0.0070$	$z_{\text{eq}}$	3379.7	$3385 \pm 34$
$A_{217}^{\text{CIB}}$	65.1	$63.7 \pm 6.6$	$\Omega_m h^2$	0.14207	$0.1423 \pm 0.0014$	$k_{\text{eq}}$	0.010315	$0.01033 \pm 0.00010$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\Omega_m h^3$	0.09599	$0.0962 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8171	$0.8161 \pm 0.0064$
$A_{143}^{\text{tSZ}}$	7.09	$5.4 \pm 1.9$	$\sigma_8$	0.8334	$0.831 \pm 0.013$	$100\theta_{s,\text{eq}}$	0.45141	$0.4509 \pm 0.0033$
$A_{100}^{\text{PS}}$	252.9	$260 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4649	$0.4640 \pm 0.0085$	$r_{\text{drag}}/D_V(0.57)$	0.07158	$0.07159 \pm 0.00053$
$A_{143}^{\text{PS}}$	41.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6224	$0.621 \pm 0.010$	$H(0.57)$	92.98	$93.03 \pm 0.64$
$A_{143 \times 217}^{\text{PS}}$	39.7	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0138	$1.011 \pm 0.016$	$D_A(0.57)$	1388.3	$1388 \pm 12$
$A_{217}^{\text{PS}}$	100.1	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5072	$2.501 \pm 0.038$	$F_{\text{AP}}(0.57)$	0.67595	$0.6761 \pm 0.0017$
$A^{\text{kSZ}}$	0.00	$< 4.07$	$z_{\text{re}}$	10.62	$10.2^{+1.6}_{-1.4}$	$f\sigma_8(0.57)$	0.4845	$0.4832 \pm 0.0077$
$A_{100}^{\text{dustTT}}$	7.38	$7.4 \pm 1.9$	$10^9 A_s$	2.229	$2.213 \pm 0.072$	$\sigma_8(0.57)$	0.6200	$0.618 \pm 0.010$
$A_{143}^{\text{dustTT}}$	8.94	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8782	$1.880 \pm 0.012$	$f_{2000}^{143}$	28.64	$29.4 \pm 2.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.0 \pm 4.1$	$D_{40}$	1237.1	$1239 \pm 14$	$f_{2000}^{143 \times 217}$	31.72	$32.1 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.1	$81.7 \pm 7.4$	$D_{220}$	5726.6	$5731 \pm 40$	$f_{2000}^{217}$	105.26	$105.7 \pm 1.9$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0813 \pm 0.0057$	$D_{810}$	2534.6	$2535 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.29	$10497.7 \pm 2.2$
$A_{100 \times 143}^{\text{dustEE}}$	0.0491	$0.0490 \pm 0.0050$	$D_{1420}$	814.92	$814.9 \pm 4.8$	$\chi_{\text{plik}}^2$	2431.1	$2450.5 \pm 6.8$
$A_{100 \times 217}^{\text{dustEE}}$	0.0996	$0.099 \pm 0.033$	$D_{2000}$	230.82	$230.5 \pm 1.7$	$\chi_{6\text{DF}}^2$	0.0342	$0.08 \pm 0.10$
$A_{143}^{\text{dustEE}}$	0.1005	$0.1003 \pm 0.0069$	$n_{s,0.002}$	0.96692	$0.9657 \pm 0.0049$	$\chi_{\text{MGS}}^2$	1.22	$1.26 \pm 0.58$
$A_{143 \times 217}^{\text{dustEE}}$	0.2239	$0.223 \pm 0.046$	$Y_P$	0.245368	$0.245355^{+0.000078}_{-0.000070}$	$\chi_{\text{DR11CMass}}^2$	2.53	$3.2 \pm 1.2$
$A_{217}^{\text{dustEE}}$	0.652	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.246695	$0.246681^{+0.000078}_{-0.000071}$	$\chi_{\text{DR11LOWZ}}^2$	0.72	$0.90 \pm 0.77$
$A_{100}^{\text{dustTE}}$	0.1409	$0.141 \pm 0.038$	$10^5 D/H$	2.6019	$2.607 \pm 0.030$	$\chi_{\text{prior}}^2$	6.8	$19.2 \pm 5.5$
$A_{100 \times 143}^{\text{dustTE}}$	0.1311	$0.132 \pm 0.029$	Age/Gyr	13.804	$13.797 \pm 0.084$	$\chi_{\text{CMB}}^2$	12928.4	$12948.2 \pm 6.7$
$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.302 \pm 0.084$	$z_*$	1089.914	$1089.97 \pm 0.30$	$\chi_{\text{BAO}}^2$	4.51	$5.4 \pm 1.6$

Best-fit  $\chi_{\text{eff}}^2 = 12939.67$ ;  $\Delta\chi_{\text{eff}}^2 = -0.49$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.91$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.44$ ;  $R - 1 = 0.00709$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.01) MGS: 1.22 ( $\Delta$  0.00) DR11CMass: 2.53 ( $\Delta$  0.04) DR11LOWZ: 0.72 ( $\Delta$  0.04) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10497.29 ( $\Delta$  -0.12) plik.dx11dr2\_HM\_v18.TTTEEE: 2431.05 ( $\Delta$  -0.48)

## 19.6 base\_omegak\_plikHM\_TTTEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022273	$0.02227 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.338 \pm 0.081$	$D_A/\text{Gpc}$	13.9006	$13.900 \pm 0.030$
$\Omega_c h^2$	0.11920	$0.1193 \pm 0.0015$	$A_{217}^{\text{dust}TE}$	1.671	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.666	$1059.64 \pm 0.30$
$100\theta_{\text{MC}}$	1.040857	$1.04085 \pm 0.00032$	$c_{100}$	0.99813	$0.99813 \pm 0.00076$	$r_{\text{drag}}$	147.411	$147.41 \pm 0.32$
$\tau$	0.0645	$0.064 \pm 0.012$	$c_{217}$	0.99610	$0.9961 \pm 0.0014$	$k_D$	0.140454	$0.14045 \pm 0.00033$
$\Omega_K$	0.00043	$0.0004 \pm 0.0020$	$H_0$	67.75	$67.72 \pm 0.68$	$100\theta_D$	0.160910	$0.16092 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0610	$3.060 \pm 0.023$	$\Omega_\Lambda$	0.6899	$0.6895^{+0.0067}_{-0.0060}$	$z_{\text{eq}}$	3380.7	$3382 \pm 34$
$n_s$	0.96604	$0.9654 \pm 0.0048$	$\Omega_m$	0.3097	$0.3101 \pm 0.0067$	$k_{\text{eq}}$	0.010318	$0.01032 \pm 0.00010$
$y_{\text{cal}}$	0.99987	$1.0001^{+0.0027}_{-0.0023}$	$\Omega_m h^2$	0.14212	$0.1422 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8168	$0.8166 \pm 0.0064$
$A_{217}^{\text{CIB}}$	67.8	$64.5 \pm 6.6$	$\Omega_m h^3$	0.09628	$0.0963 \pm 0.0014$	$100\theta_{\text{s,eq}}$	0.45130	$0.4512 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.03	—	$\sigma_8$	0.8162	$0.8159 \pm 0.0092$	$r_{\text{drag}}/D_V(0.57)$	0.07173	$0.07171 \pm 0.00052$
$A_{143}^{\text{tSZ}}$	7.18	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4542	$0.4543 \pm 0.0058$	$H(0.57)$	93.13	$93.12 \pm 0.63$
$A_{100}^{\text{PS}}$	257.2	$262 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6088	$0.6088 \pm 0.0066$	$D_A(0.57)$	1385.3	$1386 \pm 11$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9916	$0.991 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67562	$0.6757 \pm 0.0016$
$A_{143 \times 217}^{\text{PS}}$	33.1	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4533	$2.454 \pm 0.024$	$f\sigma_8(0.57)$	0.47397	$0.4739 \pm 0.0050$
$A_{217}^{\text{PS}}$	96.5	$97 \pm 10$	$z_{\text{re}}$	8.70	$8.6^{+1.3}_{-1.1}$	$\sigma_8(0.57)$	0.6076	$0.6073 \pm 0.0076$
$A^{\text{kSZ}}$	0.00	$< 4.61$	$10^9 A_s$	2.1349	$2.133 \pm 0.048$	$f_{2000}^{143}$	29.71	$30.2 \pm 2.6$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8765	$1.878 \pm 0.012$	$f_{2000}^{143 \times 217}$	32.45	$32.7 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.07	$9.0 \pm 1.8$	$D_{40}$	1228.8	$1231 \pm 13$	$f_{2000}^{217}$	105.97	$106.3 \pm 1.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.67	$17.3 \pm 4.2$	$D_{220}$	5718.7	$5726 \pm 38$	$\chi_{\text{lensing}}^2$	9.73	$10.3 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.9	$82.0 \pm 7.6$	$D_{810}$	2533.2	$2534 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.32	$10495.9 \pm 1.2$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0812 \pm 0.0058$	$D_{1420}$	814.48	$814.6 \pm 4.7$	$\chi_{\text{plik}}^2$	2434.9	$2453.2 \pm 6.6$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0490 \pm 0.0050$	$D_{2000}$	230.10	$230.0 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0157	$0.062 \pm 0.086$
$A_{100 \times 217}^{\text{dust}EE}$	0.0989	$0.098 \pm 0.033$	$n_{\text{s},0.002}$	0.96604	$0.9654 \pm 0.0048$	$\chi_{\text{MGS}}^2$	1.34	$1.40 \pm 0.58$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1004 \pm 0.0069$	$Y_{\text{P}}$	0.245350	$0.245345 \pm 0.000070$	$\chi_{\text{DR11CMass}}^2$	2.39	$3.03 \pm 0.98$
$A_{143 \times 217}^{\text{dust}EE}$	0.2231	$0.224 \pm 0.047$	$Y_{\text{P}}^{\text{BBN}}$	0.246676	$0.246671 \pm 0.000070$	$\chi_{\text{DR11LOWZ}}^2$	0.535	$0.73 \pm 0.66$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$10^5 D/H$	2.6097	$2.611 \pm 0.029$	$\chi_{\text{prior}}^2$	7.1	$19.5 \pm 5.7$
$A_{100}^{\text{dust}TE}$	0.1394	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.785	$13.786 \pm 0.084$	$\chi_{\text{CMB}}^2$	12940.0	$12959.4 \pm 6.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1314	$0.132 \pm 0.029$	$z_*$	1089.971	$1089.99 \pm 0.29$	$\chi_{\text{BAO}}^2$	4.28	$5.2 \pm 1.4$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.298 \pm 0.084$	$r_*$	144.713	$144.70 \pm 0.33$			
$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	$100\theta_*$	1.041057	$1.04104 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12951.33$ ;  $\Delta\chi_{\text{eff}}^2 = -0.26$ ;  $\bar{\chi}_{\text{eff}}^2 = 12984.11$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.46$ ;  $R - 1 = 0.03333$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMass: 2.39 ( $\Delta$  -0.06) DR11LOWZ: 0.54 ( $\Delta$  -0.07) CMB - smica\_g30\_ftl\_full\_pp: 9.73 ( $\Delta$  0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03

10495.33 ( $\Delta$  0.12) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.91 ( $\Delta$  -0.39)

## 19.7 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022336	$0.02230 \pm 0.00024$	$\Omega_m h^2$	0.14157	$0.1417 \pm 0.0021$	$100\theta_D$	0.160875	$0.16091 \pm 0.00027$
$\Omega_c h^2$	0.11859	$0.1188 \pm 0.0023$	$\Omega_m h^3$	0.09607	$0.0961 \pm 0.0019$	$z_{\text{eq}}$	3368	$3372 \pm 51$
$100\theta_{\text{MC}}$	1.041075	$1.04099 \pm 0.00049$	$\sigma_8$	0.8289	$0.829 \pm 0.015$	$k_{\text{eq}}$	0.010278	$0.01029 \pm 0.00016$
$\tau$	0.0822	$0.081 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4596	$0.460 \pm 0.010$	$100\theta_{\text{eq}}$	0.8196	$0.8188 \pm 0.0099$
$\Omega_K$	-0.00003	$0.0001 \pm 0.0027$	$\sigma_8 \Omega_m^{0.25}$	0.6172	$0.618 \pm 0.012$	$100\theta_{\text{s,eq}}$	0.4527	$0.4523 \pm 0.0051$
$\ln(10^{10} A_s)$	3.0961	$3.095 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0062	$1.007 \pm 0.018$	$r_{\text{drag}}/D_V(0.57)$	0.07181	$0.07177 \pm 0.00052$
$n_s$	0.9683	$0.9679 \pm 0.0065$	$\langle d^2 \rangle^{1/2}$	2.4879	$2.489 \pm 0.043$	$H(0.57)$	93.11	$93.10 \pm 0.73$
$y_{\text{cal}}$	1.00055	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.31	$10.2^{+1.8}_{-1.6}$	$D_A(0.57)$	1384.2	$1385 \pm 12$
$\alpha_{JLA}$	0.1411	$0.1412 \pm 0.0066$	$10^9 A_s$	2.211	$2.210 \pm 0.082$	$F_{\text{AP}}(0.57)$	0.67498	$0.6752 \pm 0.0019$
$\beta_{JLA}$	3.099	$3.103 \pm 0.081$	$10^9 A_s e^{-2\tau}$	1.8760	$1.876 \pm 0.014$	$f\sigma_8(0.57)$	0.4809	$0.4812 \pm 0.0089$
$A_{217}^{\text{CIB}}$	67.0	$63.7 \pm 6.7$	$D_{40}$	1231.6	$1233 \pm 16$	$\sigma_8(0.57)$	0.6176	$0.618 \pm 0.011$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{220}$	5725.7	$5723 \pm 41$	$f_{2000}^{143}$	29.28	$29.6 \pm 3.0$
$A_{143}^{\text{tSZ}}$	7.18	$5.2 \pm 1.9$	$D_{810}$	2534.5	$2533 \pm 14$	$f_{2000}^{143 \times 217}$	31.98	$32.1 \pm 2.2$
$A_{100}^{\text{PS}}$	252.7	$257 \pm 28$	$D_{1420}$	815.5	$815.1 \pm 5.1$	$f_{2000}^{217}$	105.67	$105.7 \pm 2.1$
$A_{143}^{\text{PS}}$	38.0	$43 \pm 8$	$D_{2000}$	230.93	$230.6 \pm 1.9$	$\chi_{\text{lowTEB}}^2$	10496.39	$10497.3 \pm 2.5$
$A_{143 \times 217}^{\text{PS}}$	32.1	$39 \pm 10$	$n_{\text{s},0.002}$	0.9683	$0.9679 \pm 0.0065$	$\chi_{\text{plik}}^2$	763.4	$777.6 \pm 5.8$
$A_{217}^{\text{PS}}$	97.0	$97 \pm 10$	$Y_{\text{P}}$	0.245378	$0.24536 \pm 0.00011$	$\chi_{\text{H070p6}}^2$	0.679	$0.75 \pm 0.35$
$A^{\text{kSZ}}$	0.00	$< 4.43$	$Y_{\text{P}}^{\text{BBN}}$	0.246704	$0.24669 \pm 0.00011$	$\chi_{\text{JLA}}^2$	695.21	$697.3 \pm 2.0$
$A_{100}^{\text{dustTT}}$	7.35	$7.4 \pm 1.9$	$10^5 \text{D/H}$	2.5978	$2.604 \pm 0.046$	$\chi_{6\text{DF}}^2$	0.0061	$0.055 \pm 0.077$
$A_{143}^{\text{dustTT}}$	9.02	$9.0 \pm 1.8$	Age/Gyr	13.791	$13.79 \pm 0.10$	$\chi_{\text{MGS}}^2$	1.47	$1.49 \pm 0.60$
$A_{143 \times 217}^{\text{dustTT}}$	17.45	$17.1 \pm 4.1$	$z_*$	1089.838	$1089.90 \pm 0.46$	$\chi_{\text{DR11CMass}}^2$	2.41	$3.05 \pm 0.93$
$A_{217}^{\text{dustTT}}$	81.9	$81.8 \pm 7.3$	$r_*$	144.82	$144.80 \pm 0.51$	$\chi_{\text{DR11LOWZ}}^2$	0.426	$0.65 \pm 0.62$
$c_{100}$	0.99791	$0.99791 \pm 0.00078$	$100\theta_*$	1.041266	$1.04119 \pm 0.00048$	$\chi_{\text{prior}}^2$	2.10	$7.3 \pm 3.5$
$c_{217}$	0.99592	$0.9959 \pm 0.0015$	$D_A/\text{Gpc}$	13.9084	$13.907 \pm 0.046$	$\chi_{\text{CMB}}^2$	11259.8	$11274.9 \pm 5.6$
$H_0$	67.86	$67.80 \pm 0.70$	$z_{\text{drag}}$	1059.742	$1059.69 \pm 0.49$	$\chi_{\text{BAO}}^2$	4.31	$5.2 \pm 1.3$
$\Omega_\Lambda$	0.6926	$0.6915 \pm 0.0078$	$r_{\text{drag}}$	147.506	$147.49 \pm 0.50$			
$\Omega_m$	0.3074	$0.3084 \pm 0.0073$	$k_D$	0.14040	$0.14039 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 11962.09$ ;  $\bar{\chi}_{\text{eff}}^2 = 11985.52$ ;  $R - 1 = 0.00926$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 MGS: 1.47 DR11CMass: 2.41 DR11LOWZ: 0.43 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.39 plik\_dx11dr2\_HM\_v18\_TT: 763.40  
Hubble - H070p6: 0.68 SN - JLA December\_2013: 695.21

## 19.8 base\_omegak\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022318	$0.02228 \pm 0.00024$	$\Omega_m h^2$	0.14107	$0.1413 \pm 0.0021$	$100\theta_D$	0.160911	$0.16096 \pm 0.00026$
$\Omega_c h^2$	0.11811	$0.1184 \pm 0.0022$	$\Omega_m h^3$	0.09593	$0.0959 \pm 0.0018$	$z_{\text{eq}}$	3355.7	$3361 \pm 50$
$100\theta_{\text{MC}}$	1.041050	$1.04105 \pm 0.00050$	$\sigma_8$	0.8160	$0.8152 \pm 0.0099$	$k_{\text{eq}}$	0.010242	$0.01026 \pm 0.00015$
$\tau$	0.0696	$0.067 \pm 0.015$	$\sigma_8 \Omega_m^{0.5}$	0.4507	$0.4514 \pm 0.0067$	$100\theta_{\text{eq}}$	0.8217	$0.8208 \pm 0.0096$
$\Omega_K$	-0.00004	$-0.0001 \pm 0.0026$	$\sigma_8 \Omega_m^{0.25}$	0.6065	$0.6066 \pm 0.0074$	$100\theta_{\text{s,eq}}$	0.45378	$0.4534 \pm 0.0049$
$\ln(10^{10} A_s)$	3.0678	$3.064 \pm 0.026$	$\sigma_8/h^{0.5}$	0.9896	$0.989 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07194	$0.07186 \pm 0.00052$
$n_s$	0.9696	$0.9683 \pm 0.0064$	$\langle d^2 \rangle^{1/2}$	2.4462	$2.447 \pm 0.026$	$H(0.57)$	93.14	$93.09 \pm 0.73$
$y_{\text{cal}}$	0.99971	$1.0001 \pm 0.0025$	$z_{\text{re}}$	9.15	$8.9^{+1.5}_{-1.2}$	$D_A(0.57)$	1382.6	$1384 \pm 12$
$\alpha_{JLA}$	0.1411	$0.1414 \pm 0.0066$	$10^9 A_s$	2.150	$2.143 \pm 0.056$	$F_{\text{AP}}(0.57)$	0.67438	$0.6748 \pm 0.0019$
$\beta_{JLA}$	3.100	$3.104 \pm 0.081$	$10^9 A_s e^{-2\tau}$	1.8702	$1.873 \pm 0.014$	$f\sigma_8(0.57)$	0.4728	$0.4727 \pm 0.0055$
$A_{217}^{\text{CIB}}$	66.8	$64.5 \pm 6.6$	$D_{40}$	1221.5	$1224 \pm 15$	$\sigma_8(0.57)$	0.6086	$0.6076 \pm 0.0080$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$D_{220}$	5709.6	$5718 \pm 41$	$f_{2000}^{143}$	29.38	$30.3 \pm 2.9$
$A_{143}^{\text{tSZ}}$	7.15	$5.1 \pm 2.0$	$D_{810}$	2530.7	$2532 \pm 14$	$f_{2000}^{143 \times 217}$	32.08	$32.7 \pm 2.1$
$A_{100}^{\text{PS}}$	250.8	$259 \pm 28$	$D_{1420}$	814.8	$814.7 \pm 5.1$	$f_{2000}^{217}$	105.72	$106.2 \pm 2.0$
$A_{143}^{\text{PS}}$	38.3	$44^{+9}_{-8}$	$D_{2000}$	230.39	$230.1 \pm 1.9$	$\chi^2_{\text{lensing}}$	9.20	$9.8 \pm 1.5$
$A_{143 \times 217}^{\text{PS}}$	32.3	$38^{+10}_{-10}$	$n_{s,0.002}$	0.9696	$0.9683 \pm 0.0064$	$\chi^2_{\text{lowTEB}}$	10494.75	$10495.4 \pm 1.4$
$A_{217}^{\text{PS}}$	97.2	$96 \pm 10$	$Y_P$	0.245370	$0.24535 \pm 0.00011$	$\chi^2_{\text{plik}}$	765.9	$779.8 \pm 5.6$
$A^{\text{kSZ}}$	0.03	$< 4.98$	$Y_P^{\text{BBN}}$	0.246696	$0.24668 \pm 0.00011$	$\chi^2_{\text{H070p6}}$	0.614	$0.71 \pm 0.34$
$A_{100}^{\text{dustTT}}$	7.52	$7.5 \pm 1.9$	$10^5 \text{D/H}$	2.6011	$2.609 \pm 0.045$	$\chi^2_{\text{JLA}}$	695.16	$697.3 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.05	$9.1 \pm 1.8$	Age/Gyr	13.793	$13.80 \pm 0.10$	$\chi^2_{6\text{DF}}$	0.0002	$0.047 \pm 0.066$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.3 \pm 4.2$	$z_*$	1089.818	$1089.89 \pm 0.44$	$\chi^2_{\text{MGS}}$	1.68	$1.62 \pm 0.61$
$A_{217}^{\text{dustTT}}$	82.2	$81.9 \pm 7.4$	$r_*$	144.962	$144.93 \pm 0.49$	$\chi^2_{\text{DR11CMass}}$	2.46	$3.04 \pm 0.90$
$c_{100}$	0.99791	$0.99789 \pm 0.00079$	$100\theta_*$	1.041244	$1.04125 \pm 0.00048$	$\chi^2_{\text{DR11LOWZ}}$	0.290	$0.54 \pm 0.55$
$c_{217}$	0.99600	$0.9960 \pm 0.0015$	$D_A/\text{Gpc}$	13.9220	$13.919 \pm 0.045$	$\chi^2_{\text{prior}}$	2.10	$7.4 \pm 3.5$
$H_0$	68.00	$67.89 \pm 0.69$	$z_{\text{drag}}$	1059.666	$1059.61 \pm 0.47$	$\chi^2_{\text{CMB}}$	11269.9	$11285.1 \pm 5.6$
$\Omega_\Lambda$	0.6950	$0.6934 \pm 0.0076$	$r_{\text{drag}}$	147.653	$147.63 \pm 0.48$	$\chi^2_{\text{BAO}}$	4.43	$5.2 \pm 1.3$
$\Omega_m$	0.3051	$0.3066 \pm 0.0071$	$k_D$	0.14024	$0.14023 \pm 0.00050$			

Best-fit  $\chi^2_{\text{eff}} = 11972.16$ ;  $\Delta\chi^2_{\text{eff}} = -11.90$ ;  $\bar{\chi}^2_{\text{eff}} = 11995.77$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -8.25$ ;  $R - 1 = 0.02258$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.68 ( $\Delta$  0.14) DR11CMass: 2.46 ( $\Delta$  0.05) DR11LOWZ: 0.29 ( $\Delta$  -0.08) CMB - smica\_g30\_ftl\_full\_pp: 9.20 ( $\Delta$  -0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.75 ( $\Delta$  -0.16) plik\_dx11dr2\_HM\_v18\_TT: 765.90 ( $\Delta$  -0.23) Hubble - H070p6: 0.61 ( $\Delta$  -0.06) SN - JLA December\_2013: 695.16 ( $\Delta$  -11.47)

## 19.9 base\_omegak\_plikHM\_TTTEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022305	$0.02229 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$D_A/\text{Gpc}$	13.9016	$13.896 \pm 0.030$
$\Omega_c h^2$	0.11909	$0.1193 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$z_{\text{drag}}$	1059.704	$1059.71 \pm 0.32$
$100\theta_{\text{MC}}$	1.040820	$1.04083 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.664	$1.67 \pm 0.25$	$r_{\text{drag}}$	147.407	$147.35 \pm 0.32$
$\tau$	0.0841	$0.082 \pm 0.017$	$c_{100}$	0.99819	$0.99818 \pm 0.00077$	$k_D$	0.140486	$0.14053 \pm 0.00033$
$\Omega_K$	0.00033	$0.0006 \pm 0.0020$	$c_{217}$	0.99594	$0.9959 \pm 0.0014$	$100\theta_D$	0.160862	$0.16087 \pm 0.00018$
$\ln(10^{10} A_s)$	3.1013	$3.097 \pm 0.033$	$H_0$	67.75	$67.78 \pm 0.66$	$z_{\text{eq}}$	3378.8	$3385 \pm 33$
$n_s$	0.96686	$0.9657 \pm 0.0048$	$\Omega_\Lambda$	0.6902	$0.6896 \pm 0.0061$	$k_{\text{eq}}$	0.010312	$0.01033 \pm 0.00010$
$y_{\text{cal}}$	1.00033	$1.0004 \pm 0.0025$	$\Omega_m$	0.3094	$0.3098 \pm 0.0065$	$100\theta_{\text{eq}}$	0.8172	$0.8162 \pm 0.0063$
$\alpha_{JLA}$	0.1412	$0.1413 \pm 0.0066$	$\Omega_m h^2$	0.14204	$0.1423 \pm 0.0014$	$100\theta_{s,\text{eq}}$	0.45149	$0.4510 \pm 0.0032$
$\beta_{JLA}$	3.099	$3.103 \pm 0.081$	$\Omega_m h^3$	0.09623	$0.0964 \pm 0.0014$	$r_{\text{drag}}/D_V(0.57)$	0.07172	$0.07174 \pm 0.00050$
$A_{217}^{\text{CIB}}$	65.1	$63.7 \pm 6.6$	$\sigma_8$	0.8324	$0.831 \pm 0.013$	$H(0.57)$	93.12	$93.18 \pm 0.61$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.26	—	$\sigma_8 \Omega_m^{0.5}$	0.4630	$0.4627 \pm 0.0087$	$D_A(0.57)$	1385.3	$1385 \pm 11$
$A_{143}^{\text{tSZ}}$	7.04	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6208	$0.620 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67555	$0.6757 \pm 0.0016$
$A_{100}^{\text{PS}}$	253.1	$260 \pm 27$	$\sigma_8/h^{0.5}$	1.0113	$1.010 \pm 0.016$	$f\sigma_8(0.57)$	0.4834	$0.4828 \pm 0.0079$
$A_{143}^{\text{PS}}$	41.9	$43 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.5011	$2.498 \pm 0.039$	$\sigma_8(0.57)$	0.6198	$0.619 \pm 0.010$
$A_{143 \times 217}^{\text{PS}}$	39.9	$40 \pm 10$	$z_{\text{re}}$	10.50	$10.2^{+1.6}_{-1.4}$	$f_{2000}^{143}$	28.79	$29.3 \pm 2.7$
$A_{217}^{\text{PS}}$	100.5	$98 \pm 10$	$10^9 A_s$	2.223	$2.214 \pm 0.072$	$f_{2000}^{143 \times 217}$	31.86	$32.1 \pm 2.0$
$A^{\text{kSZ}}$	0.00	$< 4.08$	$10^9 A_s e^{-2\tau}$	1.8787	$1.880 \pm 0.012$	$f_{2000}^{217}$	105.44	$105.7 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.39	$7.4 \pm 1.9$	$D_{40}$	1236.7	$1239 \pm 14$	$\chi_{\text{lowTEB}}^2$	10497.10	$10497.8 \pm 2.3$
$A_{143}^{\text{dust}TT}$	8.93	$8.9 \pm 1.8$	$D_{220}$	5727.0	$5732 \pm 38$	$\chi_{\text{plik}}^2$	2431.9	$2450.9 \pm 6.9$
$A_{143 \times 217}^{\text{dust}TT}$	17.80	$16.9 \pm 4.1$	$D_{810}$	2535.3	$2535 \pm 13$	$\chi_{\text{H070p6}}^2$	0.734	$0.76 \pm 0.34$
$A_{217}^{\text{dust}TT}$	82.3	$81.6 \pm 7.4$	$D_{1420}$	815.19	$814.9 \pm 4.7$	$\chi_{\text{JLA}}^2$	695.26	$697.3 \pm 2.1$
$A_{100}^{\text{dust}EE}$	0.0817	$0.0812 \pm 0.0057$	$D_{2000}$	230.80	$230.5 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0155	$0.056 \pm 0.076$
$A_{100 \times 143}^{\text{dust}EE}$	0.04921	$0.0489 \pm 0.0050$	$n_{s,0.002}$	0.96686	$0.9657 \pm 0.0048$	$\chi_{\text{MGS}}^2$	1.34	$1.42 \pm 0.57$
$A_{100 \times 217}^{\text{dust}EE}$	0.1003	$0.0996 \pm 0.033$	$Y_P$	0.245364	$0.245358 \pm 0.000072$	$\chi_{\text{DR11CMass}}^2$	2.40	$2.97 \pm 0.86$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1003 \pm 0.0069$	$Y_P^{\text{BBN}}$	0.246691	$0.246685 \pm 0.000072$	$\chi_{\text{DR11LOWZ}}^2$	0.538	$0.69 \pm 0.62$
$A_{143 \times 217}^{\text{dust}EE}$	0.2245	$0.224 \pm 0.047$	$10^5 D/H$	2.6035	$2.606 \pm 0.030$	$\chi_{\text{prior}}^2$	6.8	$19.2 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.656	$0.65 \pm 0.13$	$\text{Age}/\text{Gyr}$	13.787	$13.778 \pm 0.081$	$\chi_{\text{CMB}}^2$	12929.0	$12948.6 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1412	$0.141 \pm 0.038$	$z_*$	1089.920	$1089.96 \pm 0.30$	$\chi_{\text{BAO}}^2$	4.30	$5.1 \pm 1.2$
$A_{100 \times 143}^{\text{dust}TE}$	0.1324	$0.132 \pm 0.029$	$r_*$	144.717	$144.66 \pm 0.32$			
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.304 \pm 0.084$	$100\theta_*$	1.041012	$1.04102 \pm 0.00032$			

Best-fit  $\chi_{\text{eff}}^2 = 13636.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 13671.07$ ;  $R - 1 = 0.01192$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 MGS: 1.34 DR11CMass: 2.40 DR11LOWZ: 0.54 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.10 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.92 Hubble - H070p6: 0.73 SN - JLA December\_2013: 695.26

19.10 base\_omegak\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022282	$0.02228 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.156	$0.155 \pm 0.053$	$D_A/\text{Gpc}$	13.9014	$13.901 \pm 0.030$
$\Omega_c h^2$	0.11913	$0.1192 \pm 0.0015$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.336 \pm 0.079$	$z_{\text{drag}}$	1059.666	$1059.66 \pm 0.31$
$100\theta_{\text{MC}}$	1.040861	$1.04086 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.662	$1.66 \pm 0.26$	$r_{\text{drag}}$	147.419	$147.42 \pm 0.32$
$\tau$	0.0658	$0.064 \pm 0.012$	$c_{100}$	0.99816	$0.99817 \pm 0.00077$	$k_D$	0.140456	$0.14045^{+0.00035}_{-0.00032}$
$\Omega_K$	0.00081	$0.0008 \pm 0.0020$	$c_{217}$	0.99610	$0.9960 \pm 0.0015$	$100\theta_D$	0.160898	$0.16090 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0638	$3.061 \pm 0.023$	$H_0$	67.97	$67.94 \pm 0.63$	$z_{\text{eq}}$	3379.4	$3380 \pm 34$
$n_s$	0.96590	$0.9654 \pm 0.0048$	$\Omega_\Lambda$	0.6917	$0.6913 \pm 0.0060$	$k_{\text{eq}}$	0.010314	$0.01032 \pm 0.00010$
$y_{\text{cal}}$	1.00009	$1.0001 \pm 0.0024$	$\Omega_m$	0.3075	$0.3079 \pm 0.0062$	$100\theta_{\text{eq}}$	0.8171	$0.8171 \pm 0.0064$
$\alpha_{JLA}$	0.1412	$0.1412 \pm 0.0066$	$\Omega_m h^2$	0.14206	$0.1421 \pm 0.0014$	$100\theta_{s,\text{eq}}$	0.45143	$0.4514 \pm 0.0033$
$\beta_{JLA}$	3.102	$3.104 \pm 0.081$	$\Omega_m h^3$	0.09655	$0.0965 \pm 0.0014$	$r_{\text{drag}}/D_V(0.57)$	0.071896	$0.07187 \pm 0.00048$
$A_{217}^{\text{CIB}}$	68.1	$64.8 \pm 6.7$	$\sigma_8$	0.8172	$0.8162 \pm 0.0092$	$H(0.57)$	93.30	$93.28 \pm 0.60$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8 \Omega_m^{0.5}$	0.4532	$0.4529 \pm 0.0060$	$D_A(0.57)$	1381.8	$1382 \pm 11$
$A_{143}^{\text{tSZ}}$	7.29	$5.2 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6086	$0.6080 \pm 0.0069$	$F_{\text{AP}}(0.57)$	0.67514	$0.6752 \pm 0.0015$
$A_{100}^{\text{PS}}$	258.2	$263 \pm 27$	$\sigma_8/h^{0.5}$	0.9913	$0.990 \pm 0.011$	$f\sigma_8(0.57)$	0.4740	$0.4735 \pm 0.0051$
$A_{143}^{\text{PS}}$	38.7	$44 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.4533	$2.451 \pm 0.025$	$\sigma_8(0.57)$	0.6089	$0.6081 \pm 0.0074$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$z_{\text{re}}$	8.82	$8.7 \pm 1.2$	$f_{2000}^{143}$	29.87	$30.2 \pm 2.7$
$A_{217}^{\text{PS}}$	96.2	$96 \pm 10$	$10^9 A_s$	2.1408	$2.136^{+0.047}_{-0.052}$	$f_{2000}^{143 \times 217}$	32.59	$32.7 \pm 1.9$
$A^{\text{kSZ}}$	0.00	$< 4.72$	$10^9 A_s e^{-2\tau}$	1.8770	$1.878 \pm 0.012$	$f_{2000}^{217}$	106.12	$106.1 \pm 1.8$
$A_{100}^{\text{dust}TT}$	7.46	$7.5 \pm 1.9$	$D_{40}$	1230.4	$1232 \pm 12$	$\chi^2_{\text{lensing}}$	9.67	$10.2 \pm 1.7$
$A_{143}^{\text{dust}TT}$	9.07	$9.0 \pm 1.8$	$D_{220}$	5723.2	$5728 \pm 39$	$\chi^2_{\text{lowTEB}}$	10495.46	$10495.9 \pm 1.2$
$A_{143 \times 217}^{\text{dust}TT}$	17.60	$17.1 \pm 4.1$	$D_{810}$	2533.9	$2534 \pm 13$	$\chi^2_{\text{plik}}$	2434.8	$2453.8 \pm 6.8$
$A_{217}^{\text{dust}TT}$	81.7	$81.5 \pm 7.4$	$D_{1420}$	814.65	$814.6 \pm 4.7$	$\chi^2_{\text{H070p6}}$	0.628	$0.68 \pm 0.31$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0813 \pm 0.0057$	$D_{2000}$	230.15	$230.0 \pm 1.6$	$\chi^2_{\text{JLA}}$	695.21	$697.3 \pm 2.0$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0490 \pm 0.0050$	$n_{s,0.002}$	0.96590	$0.9654 \pm 0.0048$	$\chi^2_{6\text{DF}}$	0.0032	$0.043 \pm 0.057$
$A_{100 \times 217}^{\text{dust}EE}$	0.0988	$0.0999 \pm 0.032$	$Y_P$	0.245354	$0.245351 \pm 0.000073$	$\chi^2_{\text{MGS}}$	1.54	$1.58 \pm 0.57$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1002 \pm 0.0070$	$Y_P^{\text{BBN}}$	0.246681	$0.246678 \pm 0.000073$	$\chi^2_{\text{DR11CMass}}$	2.372	$2.91 \pm 0.74$
$A_{143 \times 217}^{\text{dust}EE}$	0.2244	$0.224 \pm 0.046$	$10^5 D/H$	2.6079	$2.609 \pm 0.030$	$\chi^2_{\text{DR11LOWZ}}$	0.358	$0.53 \pm 0.51$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$\text{Age/Gyr}$	13.765	$13.768 \pm 0.079$	$\chi^2_{\text{prior}}$	7.1	$19.2 \pm 5.4$
$A_{100}^{\text{dust}TE}$	0.1401	$0.141 \pm 0.038$	$z_*$	1089.956	$1089.96 \pm 0.30$	$\chi^2_{\text{CMB}}$	12940.0	$12959.9 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1305	$0.132 \pm 0.028$	$r_*$	144.722	$144.72 \pm 0.33$	$\chi^2_{\text{BAO}}$	4.27	$5.1 \pm 1.0$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.085$	$100\theta_*$	1.041059	$1.04105 \pm 0.00031$			

Best-fit  $\chi^2_{\text{eff}} = 13647.18$ ;  $\Delta\chi^2_{\text{eff}} = -11.86$ ;  $\bar{\chi}^2_{\text{eff}} = 13682.17$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -8.93$ ;  $R - 1 = 0.04475$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.54 ( $\Delta$  0.13) DR11CMASS: 2.37 ( $\Delta$  -0.04) DR11LOWZ: 0.36 ( $\Delta$  -0.12) CMB - smica\_g30\_ftl\_full\_pp: 9.67 ( $\Delta$  -0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.46 ( $\Delta$  0.24) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.84 ( $\Delta$  -0.35) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 695.21 ( $\Delta$  -11.45)

### 19.11 base\_omegak\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022303	$0.02231 \pm 0.00023$	$\Omega_m$	0.3138	$0.327^{+0.029}_{-0.035}$	$D_A/\text{Gpc}$	13.9227	$13.926 \pm 0.045$
$\Omega_c h^2$	0.11813	$0.1180 \pm 0.0022$	$\Omega_m h^2$	0.14107	$0.1409 \pm 0.0021$	$z_{\text{drag}}$	1059.628	$1059.64 \pm 0.46$
$100\theta_{\text{MC}}$	1.041043	$1.04111 \pm 0.00048$	$\Omega_m h^3$	0.0946	$0.0929^{+0.0047}_{-0.0054}$	$r_{\text{drag}}$	147.666	$147.71 \pm 0.48$
$\tau$	0.0635	$0.058 \pm 0.020$	$\sigma_8$	0.8104	$0.804 \pm 0.020$	$k_D$	0.140212	$0.14017 \pm 0.00050$
$\Omega_K$	-0.0020	$-0.0053^{+0.0089}_{-0.0075}$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.458 \pm 0.013$	$100\theta_D$	0.160931	$0.16095 \pm 0.00026$
$\ln(10^{10} A_s)$	3.0567	$3.046 \pm 0.039$	$\sigma_8 \Omega_m^{0.25}$	0.6066	$0.6068 \pm 0.0076$	$z_{\text{eq}}$	3355.8	$3352 \pm 49$
$n_s$	0.9690	$0.9690 \pm 0.0062$	$\sigma_8/h^{0.5}$	0.9897	$0.990 \pm 0.011$	$k_{\text{eq}}$	0.010242	$0.01023 \pm 0.00015$
$y_{\text{cal}}$	1.00026	$1.0000 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4494	$2.454 \pm 0.029$	$100\theta_{\text{eq}}$	0.8216	$0.8225 \pm 0.0096$
$A_{217}^{\text{CIB}}$	67.5	$64.4 \pm 6.6$	$z_{\text{re}}$	8.57	$7.9^{+2.3}_{-1.8}$	$100\theta_{\text{s,eq}}$	0.45376	$0.4542 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.126	$2.104 \pm 0.081$	$r_{\text{drag}}/D_V(0.57)$	0.07122	$0.0704 \pm 0.0024$
$A_{143}^{\text{tSZ}}$	7.20	$5.1 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8722	$1.871 \pm 0.014$	$H(0.57)$	92.37	$91.5^{+2.5}_{-2.9}$
$A_{100}^{\text{PS}}$	253.7	$259 \pm 28$	$D_{40}$	1220.8	$1219 \pm 17$	$D_A(0.57)$	1398	$1419 \pm 55$
$A_{143}^{\text{PS}}$	38.9	$44 \pm 8$	$D_{220}$	5718.6	$5721 \pm 41$	$F_{\text{AP}}(0.57)$	0.6763	$0.6790^{+0.0065}_{-0.0073}$
$A_{143 \times 217}^{\text{PS}}$	32.4	$38 \pm 10$	$D_{810}$	2532.9	$2531 \pm 14$	$f\sigma_8(0.57)$	0.4721	$0.4710 \pm 0.0058$
$A_{217}^{\text{PS}}$	96.7	$96 \pm 10$	$D_{1420}$	815.1	$814.4 \pm 5.1$	$\sigma_8(0.57)$	0.6022	$0.595 \pm 0.021$
$A^{\text{kSZ}}$	0.01	$< 4.92$	$D_{2000}$	230.42	$230.2 \pm 1.8$	$f_{2000}^{143}$	29.84	$30.2 \pm 2.8$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9690	$0.9690 \pm 0.0062$	$f_{2000}^{143 \times 217}$	32.45	$32.6 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245363	$0.24536 \pm 0.00011$	$f_{2000}^{217}$	106.01	$106.1 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.78	$17.2 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246690	$0.24669 \pm 0.00011$	$\chi^2_{\text{lensing}}$	9.34	$10.5 \pm 2.2$
$A_{217}^{\text{dustTT}}$	82.1	$81.6 \pm 7.4$	$10^5 D/H$	2.6040	$2.604 \pm 0.044$	$\chi^2_{\text{lowTEB}}$	10494.34	$10495.3 \pm 1.9$
$c_{100}$	0.99791	$0.99789 \pm 0.00079$	Age/Gyr	13.887	$14.02 \pm 0.35$	$\chi^2_{\text{plik}}$	766.2	$779.9 \pm 5.6$
$c_{217}$	0.99599	$0.9960 \pm 0.0014$	$z_*$	1089.840	$1089.83 \pm 0.44$	$\chi^2_{\text{prior}}$	2.11	$7.4 \pm 3.6$
$H_0$	67.05	$65.9 \pm 3.2$	$r_*$	144.969	$145.01 \pm 0.49$	$\chi^2_{\text{CMB}}$	11269.9	$11285.7 \pm 5.6$
$\Omega_\Lambda$	0.6882	$0.679^{+0.027}_{-0.022}$	$100\theta_*$	1.041242	$1.04130 \pm 0.00047$			

Best-fit  $\chi^2_{\text{eff}} = 11272.04$ ;  $\Delta\chi^2_{\text{eff}} = -0.39$ ;  $\bar{\chi}^2_{\text{eff}} = 11293.13$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.82$ ;  $R - 1 = 0.00816$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 9.34 ( $\Delta$  0.16) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.34 ( $\Delta$  -0.51) plik\_dx11dr2\_HM\_v18.TT: 766.24 ( $\Delta$  -0.08)



## 19.12 base\_omegak\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022252	$0.02228 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.304	$0.303 \pm 0.085$	Age/Gyr	13.903	$13.96 \pm 0.33$
$\Omega_c h^2$	0.11918	$0.1190 \pm 0.0015$	$A_{143}^{\text{dustTE}}$	0.155	$0.155 \pm 0.054$	$z_*$	1089.996	$1089.95 \pm 0.30$
$100\theta_{\text{MC}}$	1.040846	$1.04089 \pm 0.00033$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.337 \pm 0.080$	$r_*$	144.733	$144.75 \pm 0.33$
$\tau$	0.0584	$0.056 \pm 0.019$	$A_{217}^{\text{dustTE}}$	1.668	$1.66 \pm 0.25$	$100\theta_*$	1.041038	$1.04108 \pm 0.00032$
$\Omega_K$	-0.0020	$-0.0037^{+0.0083}_{-0.0069}$	$c_{100}$	0.99817	$0.99813 \pm 0.00078$	$D_A/\text{Gpc}$	13.9027	$13.904 \pm 0.030$
$\ln(10^{10} A_s)$	3.0486	$3.045 \pm 0.037$	$c_{217}$	0.99604	$0.9960 \pm 0.0015$	$z_{\text{drag}}$	1059.589	$1059.66 \pm 0.31$
$n_s$	0.96594	$0.9659 \pm 0.0048$	$H_0$	66.56	$66.2 \pm 3.1$	$r_{\text{drag}}$	147.440	$147.45 \pm 0.32$
$y_{\text{cal}}$	0.99983	$1.0001 \pm 0.0025$	$\Omega_\Lambda$	0.6813	$0.677^{+0.026}_{-0.022}$	$k_D$	0.140409	$0.14042 \pm 0.00033$
$A_{217}^{\text{CIB}}$	67.9	$64.7 \pm 6.6$	$\Omega_m$	0.3207	$0.326^{+0.028}_{-0.034}$	$100\theta_D$	0.160936	$0.16091 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14208	$0.1420 \pm 0.0014$	$z_{\text{eq}}$	3379.9	$3377 \pm 34$
$A_{143}^{\text{tSZ}}$	7.35	$5.3 \pm 1.9$	$\Omega_m h^3$	0.09457	$0.0939^{+0.0045}_{-0.0051}$	$k_{\text{eq}}$	0.010316	$0.01031 \pm 0.00010$
$A_{100}^{\text{PS}}$	257.5	$262 \pm 28$	$\sigma_8$	0.8097	$0.807 \pm 0.019$	$100\theta_{\text{eq}}$	0.8169	$0.8176 \pm 0.0065$
$A_{143}^{\text{PS}}$	38.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4586	$0.460 \pm 0.013$	$100\theta_{s,\text{eq}}$	0.45136	$0.4517 \pm 0.0033$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$\sigma_8 \Omega_m^{0.25}$	0.6093	$0.6091 \pm 0.0067$	$r_{\text{drag}}/D_V(0.57)$	0.07084	$0.0705 \pm 0.0024$
$A_{217}^{\text{PS}}$	96.4	$96 \pm 10$	$\sigma_8/h^{0.5}$	0.9925	$0.992 \pm 0.010$	$H(0.57)$	92.18	$91.9^{+2.4}_{-2.8}$
$A^{\text{kSZ}}$	0.00	$< 4.62$	$\langle d^2 \rangle^{1/2}$	2.4571	$2.459 \pm 0.027$	$D_A(0.57)$	1405	$1413 \pm 53$
$A_{100}^{\text{dustTT}}$	7.50	$7.5 \pm 1.9$	$z_{\text{re}}$	8.10	$7.8^{+2.2}_{-1.7}$	$F_{\text{AP}}(0.57)$	0.6781	$0.6791^{+0.0064}_{-0.0071}$
$A_{143}^{\text{dustTT}}$	9.08	$9.1 \pm 1.8$	$10^9 A_s$	2.109	$2.102 \pm 0.079$	$f\sigma_8(0.57)$	0.4734	$0.4725 \pm 0.0053$
$A_{143 \times 217}^{\text{dustTT}}$	17.67	$17.3 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8760	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.6001	$0.597 \pm 0.021$
$A_{217}^{\text{dustTT}}$	81.8	$81.7 \pm 7.4$	$D_{40}$	1225.8	$1227 \pm 15$	$f_{2000}^{143}$	29.83	$30.1 \pm 2.7$
$A_{100}^{\text{dustEE}}$	0.0814	$0.0815 \pm 0.0056$	$D_{220}$	5716.6	$5727 \pm 38$	$f_{2000}^{143 \times 217}$	32.54	$32.6 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04912	$0.0491 \pm 0.0050$	$D_{810}$	2532.6	$2533 \pm 14$	$f_{2000}^{217}$	106.04	$106.1 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0995	$0.099 \pm 0.032$	$D_{1420}$	814.08	$814.5 \pm 4.8$	$\chi^2_{\text{lensing}}$	10.06	$11.0 \pm 2.5$
$A_{143}^{\text{dustEE}}$	0.1003	$0.1005 \pm 0.0069$	$D_{2000}$	229.97	$230.1 \pm 1.6$	$\chi^2_{\text{lowTEB}}$	10494.87	$10495.9 \pm 1.8$
$A_{143 \times 217}^{\text{dustEE}}$	0.2239	$0.224 \pm 0.047$	$n_{s,0.002}$	0.96594	$0.9659 \pm 0.0048$	$\chi^2_{\text{plik}}$	2434.8	$2453.5 \pm 6.8$
$A_{217}^{\text{dustEE}}$	0.653	$0.65 \pm 0.13$	$Y_P$	0.245341	$0.245352^{+0.000077}_{-0.000070}$	$\chi^2_{\text{prior}}$	7.1	$19.5 \pm 5.6$
$A_{100}^{\text{dustTE}}$	0.1411	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246667	$0.246679^{+0.000078}_{-0.000070}$	$\chi^2_{\text{CMB}}$	12939.7	$12960.4 \pm 6.8$
$A_{100 \times 143}^{\text{dustTE}}$	0.1321	$0.132 \pm 0.029$	$10^5 \text{D/H}$	2.6135	$2.608 \pm 0.030$			

Best-fit  $\chi^2_{\text{eff}} = 12946.82$ ;  $\Delta\chi^2_{\text{eff}} = -0.35$ ;  $\bar{\chi}^2_{\text{eff}} = 12979.96$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.84$ ;  $R - 1 = 0.01082$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 10.06 ( $\Delta$  0.29) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.87 ( $\Delta$  -0.41) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.77 ( $\Delta$  -0.14)

## 20 r

### 20.1 base\_r\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022242	$0.02224 \pm 0.00023$	$\Omega_m h^3$	0.096009	$0.09597 \pm 0.00046$	$100\theta_D$	0.160944	$0.16096 \pm 0.00027$
$\Omega_c h^2$	0.11961	$0.1195 \pm 0.0022$	$\sigma_8$	0.8307	$0.828 \pm 0.014$	$z_{\text{eq}}$	3390	$3387 \pm 50$
$100\theta_{\text{MC}}$	1.040895	$1.04089 \pm 0.00048$	$\sigma_8 \Omega_m^{0.5}$	0.4654	$0.463 \pm 0.013$	$k_{\text{eq}}$	0.010346	$0.01034 \pm 0.00015$
$\tau$	0.0795	$0.077 \pm 0.019$	$\sigma_8 \Omega_m^{0.25}$	0.6218	$0.619 \pm 0.013$	$100\theta_{\text{eq}}$	0.8151	$0.8158 \pm 0.0095$
$\ln(10^{10} A_s)$	3.0927	$3.087 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0120	$1.008 \pm 0.019$	$100\theta_{s,\text{eq}}$	0.45044	$0.4508 \pm 0.0049$
$n_s$	0.9663	$0.9666 \pm 0.0062$	$\langle d^2 \rangle^{1/2}$	2.4993	$2.490 \pm 0.046$	$r_{\text{drag}}/D_V(0.57)$	0.07145	$0.07150 \pm 0.00075$
$r$	0.0000	$< 0.0472$	$z_{\text{re}}$	10.12	$9.8^{+1.9}_{-1.6}$	$H(0.57)$	92.904	$92.92 \pm 0.43$
$y_{\text{cal}}$	1.00034	$1.0004 \pm 0.0025$	$10^9 A_s$	2.204	$2.192 \pm 0.080$	$D_A(0.57)$	1390.7	$1390 \pm 13$
$A_{217}^{\text{CIB}}$	66.6	$63.8 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8797	$1.879 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.67664	$0.6765 \pm 0.0035$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.07	—	$D_{40}$	1235.3	$1248^{+16}_{-19}$	$f\sigma_8(0.57)$	0.4836	$0.4816 \pm 0.0093$
$A_{143}^{\text{tSZ}}$	7.06	$5.2 \pm 1.9$	$D_{220}$	5715.5	$5715 \pm 41$	$\sigma_8(0.57)$	0.6174	$0.615 \pm 0.011$
$A_{100}^{\text{PS}}$	252.5	$257 \pm 28$	$D_{810}$	2534.4	$2534 \pm 14$	$r_{0.002}$	0.0000	$< 0.0432$
$A_{143}^{\text{PS}}$	39.7	$44 \pm 8$	$D_{1420}$	814.94	$814.8 \pm 5.0$	$r_{0.01}$	0.0000	$< 0.0452$
$A_{143 \times 217}^{\text{PS}}$	34.3	$39 \pm 10$	$D_{2000}$	230.53	$230.4 \pm 1.9$	$\ln(10^{10} A_t)$	-8.41	$-0.65^{+1.5}_{-0.68}$
$A_{217}^{\text{PS}}$	98.2	$97 \pm 10$	$n_{s,0.002}$	0.9663	$0.9666 \pm 0.0062$	$r_{10}$	0.0000	$< 0.0218$
$A^{\text{kSZ}}$	0.01	$< 4.44$	$Y_{\text{P}}$	0.245336	$0.24533 \pm 0.00011$	$10^9 A_t$	0.000	$< 0.104$
$A_{100}^{\text{dustTT}}$	7.39	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246663	$0.24666 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	0.0000	$< 0.0888$
$A_{143}^{\text{dustTT}}$	9.02	$9.0 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6156	$2.617 \pm 0.045$	$f_{2000}^{143}$	29.45	$29.8 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.56	$17.1 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.8096	$13.810 \pm 0.039$	$f_{2000}^{143 \times 217}$	32.19	$32.3 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.4$	$z_*$	1090.049	$1090.05 \pm 0.44$	$f_{2000}^{217}$	105.86	$105.9 \pm 2.0$
$c_{100}$	0.99789	$0.99787 \pm 0.00078$	$r_*$	144.630	$144.67 \pm 0.50$	$\chi_{\text{lowTEB}}^2$	10496.51	$10498.7 \pm 2.7$
$c_{217}$	0.99595	$0.9959 \pm 0.0014$	$100\theta_*$	1.041092	$1.04109 \pm 0.00047$	$\chi_{\text{plik}}^2$	763.4	$777.5 \pm 5.7$
$H_0$	67.38	$67.42 \pm 0.99$	$D_A/\text{Gpc}$	13.8921	$13.896 \pm 0.046$	$\chi_{\text{prior}}^2$	2.04	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6861	$0.687 \pm 0.014$	$z_{\text{drag}}$	1059.628	$1059.58 \pm 0.48$	$\chi_{\text{CMB}}^2$	11259.9	$11276.2 \pm 5.8$
$\Omega_m$	0.3139	$0.313 \pm 0.014$	$r_{\text{drag}}$	147.336	$147.38 \pm 0.49$			
$\Omega_m h^2$	0.14250	$0.1424 \pm 0.0021$	$k_D$	0.14051	$0.14045 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.94$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.56$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.74$ ;  $R - 1 = 0.00544$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.51 ( $\Delta$  0.04) plik\_dx11dr2\_HM\_v18\_TT: 763.39 ( $\Delta$  0.02)

## 20.2 base\_r\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022277	$0.02227 \pm 0.00020$	$\sigma_8$	0.8295	$0.827 \pm 0.015$	$k_{\text{eq}}$	0.010302	$0.010295 \pm 0.000091$
$\Omega_c h^2$	0.11897	$0.1189 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	0.4619	$0.460 \pm 0.010$	$100\theta_{\text{eq}}$	0.8179	$0.8183 \pm 0.0055$
$100\theta_{\text{MC}}$	1.040952	$1.04096 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	0.6190	$0.617 \pm 0.012$	$100\theta_{\text{s,eq}}$	0.45184	$0.4521 \pm 0.0029$
$\tau$	0.0813	$0.079 \pm 0.018$	$\sigma_8/h^{0.5}$	1.0085	$1.006 \pm 0.018$	$r_{\text{drag}}/D_V(0.57)$	0.071663	$0.07170 \pm 0.00043$
$\ln(10^{10} A_s)$	3.0945	$3.090 \pm 0.035$	$\langle d^2 \rangle^{1/2}$	2.4925	$2.485 \pm 0.043$	$H(0.57)$	93.010	$93.02 \pm 0.27$
$n_s$	0.96739	$0.9680 \pm 0.0045$	$z_{\text{re}}$	10.25	$9.97^{+1.7}_{-1.5}$	$D_A(0.57)$	1387.2	$1386.8 \pm 7.8$
$r$	0.0001	$< 0.0491$	$10^9 A_s$	2.208	$2.198 \pm 0.077$	$F_{\text{AP}}(0.57)$	0.67567	$0.6755 \pm 0.0020$
$y_{\text{cal}}$	1.00022	$1.0004 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8765	$1.876 \pm 0.012$	$f\sigma_8(0.57)$	0.4819	$0.4806 \pm 0.0087$
$A_{217}^{\text{CIB}}$	67.2	$63.5 \pm 6.6$	$D_{40}$	1233.3	$1246^{+15}_{-19}$	$\sigma_8(0.57)$	0.6174	$0.616 \pm 0.011$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{220}$	5718.3	$5717 \pm 41$	$r_{0.002}$	0.0000	$< 0.0451$
$A_{143}^{\text{tSZ}}$	7.19	$5.2 \pm 1.9$	$D_{810}$	2532.8	$2534 \pm 14$	$r_{0.01}$	0.0000	$< 0.0470$
$A_{100}^{\text{PS}}$	252.0	$256 \pm 28$	$D_{1420}$	814.70	$815.1 \pm 5.0$	$\ln(10^{10} A_t)$	-6.78	$-0.60^{+1.4}_{-0.67}$
$A_{143}^{\text{PS}}$	38.1	$43 \pm 8$	$D_{2000}$	230.48	$230.6 \pm 1.8$	$r_{10}$	0.0000	$< 0.0227$
$A_{143 \times 217}^{\text{PS}}$	32.0	$39^{+10}_{-10}$	$n_{\text{s},0.002}$	0.96739	$0.9680 \pm 0.0045$	$10^9 A_t$	0.000	$< 0.108$
$A_{217}^{\text{PS}}$	96.8	$98 \pm 10$	$Y_{\text{P}}$	0.245352	$0.245347 \pm 0.000092$	$10^9 A_t e^{-2\tau}$	0.0001	$< 0.0921$
$A^{\text{kSZ}}$	0.00	$< 4.39$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.246673 \pm 0.000093$	$f_{2000}^{143}$	29.45	$29.6 \pm 2.8$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.6089	$2.610 \pm 0.039$	$f_{2000}^{143 \times 217}$	32.14	$32.2 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.01	$9.0 \pm 1.8$	$\text{Age}/\text{Gyr}$	13.8016	$13.801 \pm 0.029$	$f_{2000}^{217}$	105.79	$105.8 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.53	$17.2 \pm 4.1$	$z_*$	1089.947	$1089.95 \pm 0.31$	$\chi_{\text{lowTEB}}^2$	10496.46	$10498.5 \pm 2.7$
$A_{217}^{\text{dustTT}}$	82.0	$82.0 \pm 7.4$	$r_*$	144.768	$144.80 \pm 0.33$	$\chi_{\text{plik}}^2$	763.5	$777.1 \pm 5.6$
$c_{100}$	0.99790	$0.99788 \pm 0.00078$	$100\theta_*$	1.041149	$1.04116 \pm 0.00041$	$\chi_{6\text{DF}}^2$	0.0219	$0.059 \pm 0.078$
$c_{217}$	0.99598	$0.9959 \pm 0.0014$	$D_A/\text{Gpc}$	13.9047	$13.907 \pm 0.032$	$\chi_{\text{MGS}}^2$	1.28	$1.39 \pm 0.55$
$H_0$	67.65	$67.68 \pm 0.57$	$z_{\text{drag}}$	1059.628	$1059.63 \pm 0.45$	$\chi_{\text{DR11CMass}}^2$	2.448	$2.89 \pm 0.68$
$\Omega_\Lambda$	0.6899	$0.6904 \pm 0.0077$	$r_{\text{drag}}$	147.469	$147.50 \pm 0.35$	$\chi_{\text{DR11LOWZ}}^2$	0.609	$0.71 \pm 0.60$
$\Omega_m$	0.3101	$0.3096 \pm 0.0077$	$k_{\text{D}}$	0.140400	$0.14036 \pm 0.00045$	$\chi_{\text{prior}}^2$	2.12	$7.3 \pm 3.5$
$\Omega_m h^2$	0.14190	$0.1418 \pm 0.0012$	$100\theta_{\text{D}}$	0.160925	$0.16094 \pm 0.00026$	$\chi_{\text{CMB}}^2$	11259.9	$11275.6 \pm 5.6$
$\Omega_m h^3$	0.095991	$0.09597 \pm 0.00046$	$z_{\text{eq}}$	3375.5	$3373 \pm 30$	$\chi_{\text{BAO}}^2$	4.36	$5.0 \pm 1.0$

Best-fit  $\chi_{\text{eff}}^2 = 11266.41$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11288.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.65$ ;  $R - 1 = 0.00859$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  -0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.45 ( $\Delta$  -0.00) DR11LOWZ: 0.61 ( $\Delta$  -0.01) CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.46  
( $\Delta$  0.04) plik\_dx11dr2\_HM\_v18\_TT: 763.48 ( $\Delta$  -0.12)

### 20.3 base\_r\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022264	$0.02226 \pm 0.00023$	$\Omega_m h^3$	0.096004	$0.09597 \pm 0.00046$	$100\theta_D$	0.160919	$0.16094 \pm 0.00027$
$\Omega_c h^2$	0.11935	$0.1191 \pm 0.0021$	$\sigma_8$	0.8279	$0.827 \pm 0.015$	$z_{\text{eq}}$	3384.2	$3377 \pm 47$
$100\theta_{\text{MC}}$	1.040885	$1.04094 \pm 0.00046$	$\sigma_8 \Omega_m^{0.5}$	0.4627	$0.461 \pm 0.013$	$k_{\text{eq}}$	0.010329	$0.01031 \pm 0.00014$
$\tau$	0.0774	$0.078 \pm 0.019$	$\sigma_8 \Omega_m^{0.25}$	0.6189	$0.618 \pm 0.013$	$100\theta_{\text{eq}}$	0.8162	$0.8177 \pm 0.0089$
$\ln(10^{10} A_s)$	3.0880	$3.089 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0078	$1.006 \pm 0.019$	$100\theta_{s,\text{eq}}$	0.45098	$0.4517 \pm 0.0045$
$n_s$	0.9667	$0.9676 \pm 0.0059$	$\langle d^2 \rangle^{1/2}$	2.4900	$2.486 \pm 0.045$	$r_{\text{drag}}/D_V(0.57)$	0.07153	$0.07164 \pm 0.00070$
$r$	0.0000	$< 0.0481$	$z_{\text{re}}$	9.91	$9.9^{+1.8}_{-1.6}$	$H(0.57)$	92.946	$93.00 \pm 0.40$
$y_{\text{cal}}$	1.00038	$1.0004 \pm 0.0025$	$10^9 A_s$	2.193	$2.197 \pm 0.080$	$D_A(0.57)$	1389.3	$1388 \pm 12$
$A_{217}^{\text{CIB}}$	66.5	$63.6 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8789	$1.877 \pm 0.013$	$F_{\text{AP}}(0.57)$	0.67626	$0.6758 \pm 0.0032$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.05	—	$D_{40}$	1233.8	$1247^{+16}_{-19}$	$f\sigma_8(0.57)$	0.4816	$0.4808 \pm 0.0092$
$A_{143}^{\text{tSZ}}$	7.08	$5.2 \pm 1.9$	$D_{220}$	5719.3	$5717 \pm 41$	$\sigma_8(0.57)$	0.6156	$0.616 \pm 0.011$
$A_{100}^{\text{PS}}$	252.9	$257 \pm 28$	$D_{810}$	2534.6	$2534 \pm 14$	$r_{0.002}$	0.0000	$< 0.0441$
$A_{143}^{\text{PS}}$	39.5	$43 \pm 8$	$D_{1420}$	815.16	$815.1 \pm 5.0$	$r_{0.01}$	0.0000	$< 0.0461$
$A_{143 \times 217}^{\text{PS}}$	33.9	$39^{+10}_{-10}$	$D_{2000}$	230.56	$230.5 \pm 1.8$	$\ln(10^{10} A_t)$	-10.73	$-0.63^{+1.4}_{-0.67}$
$A_{217}^{\text{PS}}$	98.3	$98 \pm 10$	$n_{s,0.002}$	0.9667	$0.9676 \pm 0.0059$	$r_{10}$	0.0000	$< 0.0222$
$A^{\text{kSZ}}$	0.00	$< 4.40$	$Y_{\text{P}}$	0.245346	$0.24534 \pm 0.00010$	$10^9 A_t$	0.000	$< 0.106$
$A_{100}^{\text{dustTT}}$	7.40	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246673	$0.24667 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.0000	$< 0.0902$
$A_{143}^{\text{dustTT}}$	9.01	$9.0 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.6113	$2.612 \pm 0.043$	$f_{2000}^{143}$	29.48	$29.6 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.61	$17.2 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.8064	$13.803 \pm 0.037$	$f_{2000}^{143 \times 217}$	32.15	$32.2 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.2	$81.9 \pm 7.4$	$z_*$	1089.998	$1089.97 \pm 0.41$	$f_{2000}^{217}$	105.87	$105.8 \pm 2.0$
$c_{100}$	0.99790	$0.99788 \pm 0.00078$	$r_*$	144.679	$144.76 \pm 0.47$	$\chi_{\text{lowTEB}}^2$	10496.17	$10498.6 \pm 2.7$
$c_{217}$	0.99591	$0.9959 \pm 0.0014$	$100\theta_*$	1.041084	$1.04113 \pm 0.00046$	$\chi_{\text{plik}}^2$	763.8	$777.5 \pm 5.7$
$H_0$	67.48	$67.62 \pm 0.92$	$D_A/\text{Gpc}$	13.8970	$13.904 \pm 0.043$	$\chi_{\text{JLA}}^2$	706.775	$706.86 \pm 0.41$
$\Omega_\Lambda$	0.6876	$0.689 \pm 0.013$	$z_{\text{drag}}$	1059.628	$1059.62 \pm 0.47$	$\chi_{\text{prior}}^2$	2.02	$7.3 \pm 3.6$
$\Omega_m$	0.3124	$0.311 \pm 0.013$	$r_{\text{drag}}$	147.382	$147.46 \pm 0.47$	$\chi_{\text{CMB}}^2$	11260.0	$11276.1 \pm 5.7$
$\Omega_m h^2$	0.14226	$0.1420 \pm 0.0019$	$k_D$	0.14048	$0.14039 \pm 0.00051$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.76$ ;  $\Delta\chi_{\text{eff}}^2 = 0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11990.32$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.72$ ;  $R - 1 = 0.00627$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.17 ( $\Delta$  -0.27) plik\_dx11dr2\_HM\_v18\_TT: 763.79 ( $\Delta$  0.37) SN - JLA December\_2013: 706.77 ( $\Delta$  0.01)

## 20.4 base\_r\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022286	$0.02228 \pm 0.00023$	$\Omega_m h^3$	0.096046	$0.09598 \pm 0.00046$	$100\theta_D$	0.160903	$0.16093 \pm 0.00027$
$\Omega_c h^2$	0.11921	$0.1189 \pm 0.0021$	$\sigma_8$	0.8305	$0.827 \pm 0.014$	$z_{\text{eq}}$	3381.3	$3374 \pm 48$
$100\theta_{\text{MC}}$	1.040947	$1.04096 \pm 0.00047$	$\sigma_8 \Omega_m^{0.5}$	0.4634	$0.461 \pm 0.013$	$k_{\text{eq}}$	0.010320	$0.01030 \pm 0.00015$
$\tau$	0.0813	$0.079 \pm 0.019$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.617 \pm 0.013$	$100\theta_{\text{eq}}$	0.8168	$0.8182 \pm 0.0091$
$\ln(10^{10} A_s)$	3.0953	$3.090 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0104	$1.006 \pm 0.019$	$100\theta_{s,\text{eq}}$	0.45129	$0.4520 \pm 0.0047$
$n_s$	0.9674	$0.9679 \pm 0.0061$	$\langle d^2 \rangle^{1/2}$	2.4959	$2.485 \pm 0.045$	$r_{\text{drag}}/D_V(0.57)$	0.07159	$0.07169 \pm 0.00072$
$r$	0.0001	$< 0.0486$	$z_{\text{re}}$	10.26	$9.96^{+1.8}_{-1.6}$	$H(0.57)$	92.991	$93.03 \pm 0.41$
$y_{\text{cal}}$	1.00028	$1.0004 \pm 0.0025$	$10^9 A_s$	2.209	$2.199 \pm 0.080$	$D_A(0.57)$	1388.1	$1387 \pm 13$
$A_{217}^{\text{CIB}}$	66.8	$63.5 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8777	$1.877 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.67598	$0.6756 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{40}$	1233.7	$1246^{+17}_{-19}$	$f\sigma_8(0.57)$	0.4828	$0.4806 \pm 0.0093$
$A_{143}^{\text{tSZ}}$	7.15	$5.2 \pm 1.9$	$D_{220}$	5717.5	$5718 \pm 41$	$\sigma_8(0.57)$	0.6179	$0.616 \pm 0.011$
$A_{100}^{\text{PS}}$	251.6	$256 \pm 28$	$D_{810}$	2533.8	$2534 \pm 14$	$r_{0.002}$	0.0001	$< 0.0447$
$A_{143}^{\text{PS}}$	38.4	$43 \pm 8$	$D_{1420}$	815.16	$815.2 \pm 5.0$	$r_{0.01}$	0.0001	$< 0.0466$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$D_{2000}$	230.68	$230.6 \pm 1.8$	$\ln(10^{10} A_t)$	-6.13	$-0.62^{+1.4}_{-0.68}$
$A_{217}^{\text{PS}}$	97.3	$98 \pm 10$	$n_{s,0.002}$	0.9674	$0.9679 \pm 0.0061$	$r_{10}$	0.0000	$< 0.0225$
$A^{\text{kSZ}}$	0.00	$< 4.38$	$Y_{\text{P}}$	0.245356	$0.24535 \pm 0.00010$	$10^9 A_t$	0.000	$< 0.107$
$A_{100}^{\text{dustTT}}$	7.48	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.24668 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.0002	$< 0.0913$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	$10^5 \text{D}/\text{H}$	2.6071	$2.609 \pm 0.044$	$f_{2000}^{143}$	29.21	$29.6 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.54	$17.2 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.8018	$13.801 \pm 0.038$	$f_{2000}^{143 \times 217}$	31.93	$32.1 \pm 2.1$
$A_{217}^{\text{dustTT}}$	81.9	$82.0 \pm 7.4$	$z_*$	1089.956	$1089.95 \pm 0.42$	$f_{2000}^{217}$	105.62	$105.8 \pm 2.0$
$c_{100}$	0.99793	$0.99788 \pm 0.00078$	$r_*$	144.700	$144.78 \pm 0.48$	$\chi_{\text{lowTEB}}^2$	10496.48	$10498.6 \pm 2.7$
$c_{217}$	0.99592	$0.9959 \pm 0.0014$	$100\theta_*$	1.041139	$1.04116 \pm 0.00046$	$\chi_{\text{plik}}^2$	763.5	$777.6 \pm 5.8$
$H_0$	67.57	$67.68 \pm 0.95$	$D_A/\text{Gpc}$	13.8982	$13.906 \pm 0.045$	$\chi_{\text{H070p6}}^2$	0.829	$0.85 \pm 0.50$
$\Omega_\Lambda$	0.6887	$0.690^{+0.014}_{-0.013}$	$z_{\text{drag}}$	1059.704	$1059.64 \pm 0.47$	$\chi_{\text{prior}}^2$	2.00	$7.3 \pm 3.6$
$\Omega_m$	0.3113	$0.310^{+0.013}_{-0.014}$	$r_{\text{drag}}$	147.392	$147.48 \pm 0.48$	$\chi_{\text{CMB}}^2$	11260.0	$11276.2 \pm 5.8$
$\Omega_m h^2$	0.14214	$0.1419 \pm 0.0020$	$k_D$	0.14048	$0.14038 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.83$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11284.42$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.73$ ;  $R - 1 = 0.00723$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014\_10\_03.v5c\_Ap: 10496.48 ( $\Delta$  0.16) plik\_dx11dr2\_HM.v18\_TT: 763.51 ( $\Delta$  -0.15) Hubble - H070p6: 0.83 ( $\Delta$  0.00)

## 20.5 base\_r\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02224 \pm 0.00023$	$\Omega_m h^3$	$0.09597 \pm 0.00046$	$100\theta_D$	$0.16096 \pm 0.00027$
$\Omega_c h^2$	$0.1194 \pm 0.0022$	$\sigma_8$	$0.829^{+0.013}_{-0.015}$	$z_{\text{eq}}$	$3385 \pm 49$
$100\theta_{\text{MC}}$	$1.04090 \pm 0.00047$	$\sigma_8 \Omega_m^{0.5}$	$0.464 \pm 0.013$	$k_{\text{eq}}$	$0.01033 \pm 0.00015$
$\tau$	$0.078^{+0.017}_{-0.020}$	$\sigma_8 \Omega_m^{0.25}$	$0.620 \pm 0.013$	$100\theta_{\text{eq}}$	$0.8161 \pm 0.0094$
$\ln(10^{10} A_s)$	$3.089^{+0.032}_{-0.038}$	$\sigma_8/h^{0.5}$	$1.009 \pm 0.019$	$100\theta_{s,\text{eq}}$	$0.4510 \pm 0.0048$
$n_s$	$0.9668 \pm 0.0061$	$\langle d^2 \rangle^{1/2}$	$2.492 \pm 0.044$	$r_{\text{drag}}/D_V(0.57)$	$0.07152 \pm 0.00074$
$r$	$< 0.0478$	$z_{\text{re}}$	$9.9 \pm 1.5$	$H(0.57)$	$92.94 \pm 0.42$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$10^9 A_s$	$2.197^{+0.068}_{-0.085}$	$D_A(0.57)$	$1390 \pm 13$
$A_{217}^{\text{CIB}}$	$63.6 \pm 6.6$	$10^9 A_s e^{-2\tau}$	$1.879 \pm 0.014$	$F_{\text{AP}}(0.57)$	$0.6764 \pm 0.0034$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1248^{+17}_{-19}$	$f\sigma_8(0.57)$	$0.4821 \pm 0.0090$
$A_{143}^{\text{tSZ}}$	$5.2 \pm 1.9$	$D_{220}$	$5715 \pm 41$	$\sigma_8(0.57)$	$0.6161^{+0.0097}_{-0.012}$
$A_{100}^{\text{PS}}$	$257 \pm 28$	$D_{810}$	$2534 \pm 14$	$r_{0.002}$	$< 0.0437$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$D_{1420}$	$814.9 \pm 5.0$	$r_{0.01}$	$< 0.0457$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{2000}$	$230.5 \pm 1.8$	$\ln(10^{10} A_t)$	$-0.64^{+1.4}_{-0.68}$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$n_{s,0.002}$	$0.9668 \pm 0.0061$	$r_{10}$	$< 0.0220$
$A^{\text{kSZ}}$	$< 4.40$	$Y_{\text{P}}$	$0.24533 \pm 0.00011$	$10^9 A_t$	$< 0.105$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	$0.24666 \pm 0.00011$	$10^9 A_t e^{-2\tau}$	$< 0.0897$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$10^5 \text{D/H}$	$2.616 \pm 0.044$	$f_{2000}^{143}$	$29.7 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.1$	$\text{Age/Gyr}$	$13.808 \pm 0.038$	$f_{2000}^{143 \times 217}$	$32.2 \pm 2.1$
$A_{217}^{\text{dustTT}}$	$82.0 \pm 7.4$	$z_*$	$1090.03 \pm 0.43$	$f_{2000}^{217}$	$105.9 \pm 2.0$
$c_{100}$	$0.99787 \pm 0.00078$	$r_*$	$144.68 \pm 0.49$	$\chi_{\text{lowTEB}}^2$	$10498.7 \pm 2.7$
$c_{217}$	$0.9959 \pm 0.0014$	$100\theta_*$	$1.04109 \pm 0.00046$	$\chi_{\text{plik}}^2$	$777.4 \pm 5.7$
$H_0$	$67.46 \pm 0.97$	$D_A/\text{Gpc}$	$13.897 \pm 0.045$	$\chi_{\text{prior}}^2$	$7.3 \pm 3.5$
$\Omega_\Lambda$	$0.687 \pm 0.013$	$z_{\text{drag}}$	$1059.60 \pm 0.47$	$\chi_{\text{CMB}}^2$	$11276.1 \pm 5.7$
$\Omega_m$	$0.313 \pm 0.013$	$r_{\text{drag}}$	$147.39 \pm 0.49$		
$\Omega_m h^2$	$0.1423 \pm 0.0021$	$k_D$	$0.14045 \pm 0.00052$		

$$\bar{\chi}_{\text{eff}}^2 = 11283.39; \Delta\bar{\chi}_{\text{eff}}^2 = 1.75; R - 1 = 0.00636$$

## 20.6 base\_r\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022283	$0.02225 \pm 0.00016$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.339 \pm 0.080$	$D_A/\text{Gpc}$	13.8867	$13.891 \pm 0.029$
$\Omega_c h^2$	0.11977	$0.1197 \pm 0.0014$	$A_{217}^{\text{dustTE}}$	1.675	$1.67 \pm 0.26$	$z_{\text{drag}}$	1059.704	$1059.64 \pm 0.31$
$100\theta_{\text{MC}}$	1.040780	$1.04077 \pm 0.00032$	$c_{100}$	0.99826	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	147.250	$147.30 \pm 0.31$
$\tau$	0.0829	$0.078 \pm 0.017$	$c_{217}$	0.99577	$0.9960 \pm 0.0015$	$k_D$	0.140635	$0.14055 \pm 0.00033$
$\ln(10^{10} A_s)$	3.1010	$3.092 \pm 0.033$	$H_0$	67.32	$67.31 \pm 0.64$	$100\theta_D$	0.160864	$0.16091 \pm 0.00018$
$n_s$	0.96590	$0.9652 \pm 0.0047$	$\Omega_\Lambda$	0.6851	$0.6851 \pm 0.0089$	$z_{\text{eq}}$	3394.6	$3392 \pm 32$
$r$	0.0001	$< 0.0463$	$\Omega_m$	0.3149	$0.3149 \pm 0.0089$	$k_{\text{eq}}$	0.010361	$0.010354 \pm 0.000099$
$y_{\text{cal}}$	1.00023	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14270	$0.1426 \pm 0.0014$	$100\theta_{\text{eq}}$	0.8143	$0.8147 \pm 0.0061$
$A_{217}^{\text{CIB}}$	63.2	$63.6 \pm 6.6$	$\Omega_m h^3$	0.096060	$0.09598 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.44997	$0.4502 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.48	—	$\sigma_8$	0.8342	$0.830 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	0.071381	$0.07140 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	6.88	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4681	$0.4657 \pm 0.0097$	$H(0.57)$	92.893	$92.88 \pm 0.28$
$A_{100}^{\text{PS}}$	251.0	$260 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6249	$0.622 \pm 0.011$	$D_A(0.57)$	1391.4	$1391.7 \pm 8.6$
$A_{143}^{\text{PS}}$	45.3	$43 \pm 8$	$\sigma_8/h^{0.5}$	1.0168	$1.012 \pm 0.016$	$F_{\text{AP}}(0.57)$	0.67689	$0.6769 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	46.7	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5121	$2.502 \pm 0.039$	$f\sigma_8(0.57)$	0.4859	$0.4834 \pm 0.0079$
$A_{217}^{\text{PS}}$	103.9	$98 \pm 10$	$z_{\text{re}}$	10.41	$9.96_{-1.5}^{+1.6}$	$\sigma_8(0.57)$	0.6198	$0.617 \pm 0.010$
$A^{\text{kSZ}}$	0.01	$< 4.12$	$10^9 A_s$	2.222	$2.202 \pm 0.072$	$r_{0.002}$	0.0001	$< 0.0422$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8826	$1.881 \pm 0.012$	$r_{0.01}$	0.0001	$< 0.0442$
$A_{143}^{\text{dustTT}}$	8.93	$8.9 \pm 1.8$	$D_{40}$	1239.5	$1253_{-18}^{+14}$	$\ln(10^{10} A_t)$	-6.35	$-0.66_{-0.68}^{+1.4}$
$A_{143 \times 217}^{\text{dustTT}}$	17.83	$17.0 \pm 4.1$	$D_{220}$	5725.9	$5726 \pm 38$	$r_{10}$	0.0000	$< 0.0212$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.4$	$D_{810}$	2537.0	$2535 \pm 14$	$10^9 A_t$	0.000	$< 0.102$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0808 \pm 0.0057$	$D_{1420}$	815.78	$814.9 \pm 4.8$	$10^9 A_t e^{-2\tau}$	0.0001	$< 0.0871$
$A_{100 \times 143}^{\text{dustEE}}$	0.04893	$0.0483 \pm 0.0050$	$D_{2000}$	230.93	$230.5 \pm 1.6$	$f_{2000}^{143}$	28.39	$29.4 \pm 2.7$
$A_{100 \times 217}^{\text{dustEE}}$	0.0992	$0.0999 \pm 0.032$	$n_{s,0.002}$	0.96590	$0.9652 \pm 0.0047$	$f_{2000}^{143 \times 217}$	31.66	$32.1 \pm 1.9$
$A_{143}^{\text{dustEE}}$	0.1004	$0.0996 \pm 0.0069$	$Y_P$	0.245355	$0.245338 \pm 0.000071$	$f_{2000}^{217}$	105.12	$105.8 \pm 1.9$
$A_{143 \times 217}^{\text{dustEE}}$	0.2223	$0.223 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246681	$0.246664 \pm 0.000072$	$\chi_{\text{lowTEB}}^2$	10497.21	$10499.2 \pm 2.6$
$A_{217}^{\text{dustEE}}$	0.652	$0.65 \pm 0.13$	$10^5 D/H$	2.6077	$2.614 \pm 0.030$	$\chi_{\text{plik}}^2$	2431.8	$2450.7 \pm 6.7$
$A_{100}^{\text{dustTE}}$	0.1400	$0.142 \pm 0.038$	$\text{Age/Gyr}$	13.8094	$13.813 \pm 0.025$	$\chi_{\text{prior}}^2$	6.6	$19.1 \pm 5.5$
$A_{100 \times 143}^{\text{dustTE}}$	0.1315	$0.132 \pm 0.029$	$z_*$	1090.010	$1090.05 \pm 0.29$	$\chi_{\text{CMB}}^2$	12929.0	$12949.9 \pm 6.9$
$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.303 \pm 0.084$	$r_*$	144.557	$144.60 \pm 0.32$			
$A_{143}^{\text{dustTE}}$	0.153	$0.156 \pm 0.053$	$100\theta_*$	1.040976	$1.04097 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12935.59$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.99$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.29$ ;  $R - 1 = 0.00631$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.21 ( $\Delta$  0.28) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.77 ( $\Delta$  0.12)

## 20.7 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022317	$0.02229 \pm 0.00014$	$A_{217}^{\text{dust}TE}$	1.671	$1.67 \pm 0.25$	$r_{\text{drag}}$	147.359	$147.40 \pm 0.26$
$\Omega_c h^2$	0.11922	$0.1192 \pm 0.0011$	$c_{100}$	0.99819	$0.99816 \pm 0.00077$	$k_D$	0.140545	$0.14048 \pm 0.00030$
$100\theta_{\text{MC}}$	1.040813	$1.04084 \pm 0.00030$	$c_{217}$	0.99586	$0.9960 \pm 0.0014$	$100\theta_D$	0.160841	$0.16089 \pm 0.00018$
$\tau$	0.0836	$0.081 \pm 0.016$	$H_0$	67.551	$67.55 \pm 0.47$	$z_{\text{eq}}$	3382.2	$3381 \pm 24$
$\ln(10^{10} A_s)$	3.1005	$3.095 \pm 0.032$	$\Omega_\Lambda$	0.6884	$0.6885 \pm 0.0064$	$k_{\text{eq}}$	0.010323	$0.010318 \pm 0.000073$
$n_s$	0.96708	$0.9665 \pm 0.0040$	$\Omega_m$	0.3116	$0.3115 \pm 0.0064$	$100\theta_{\text{eq}}$	0.81666	$0.8169 \pm 0.0045$
$r$	0.0001	$< 0.0468$	$\Omega_m h^2$	0.14218	$0.1421 \pm 0.0010$	$100\theta_{s,\text{eq}}$	0.45117	$0.4513 \pm 0.0023$
$y_{\text{cal}}$	1.00009	$1.0004 \pm 0.0025$	$\Omega_m h^3$	0.096043	$0.09599 \pm 0.00030$	$r_{\text{drag}}/D_V(0.57)$	0.071562	$0.07157 \pm 0.00035$
$A_{217}^{\text{CIB}}$	64.0	$63.5 \pm 6.6$	$\sigma_8$	0.8324	$0.830 \pm 0.013$	$H(0.57)$	92.982	$92.97 \pm 0.21$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.37	—	$\sigma_8 \Omega_m^{0.5}$	0.4646	$0.4633 \pm 0.0086$	$D_A(0.57)$	1388.4	$1388.5 \pm 6.4$
$A_{143}^{\text{tSZ}}$	7.02	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6219	$0.620 \pm 0.010$	$F_{\text{AP}}(0.57)$	0.67605	$0.6760 \pm 0.0016$
$A_{100}^{\text{PS}}$	251.8	$259 \pm 27$	$\sigma_8/h^{0.5}$	1.0128	$1.010 \pm 0.016$	$f\sigma_8(0.57)$	0.4840	$0.4826 \pm 0.0078$
$A_{143}^{\text{PS}}$	43.4	$43 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.5032	$2.498 \pm 0.039$	$\sigma_8(0.57)$	0.6192	$0.6175 \pm 0.0099$
$A_{143 \times 217}^{\text{PS}}$	43.4	$40 \pm 10$	$z_{\text{re}}$	10.46	$10.2_{-1.4}^{+1.6}$	$r_{0.002}$	0.0001	$< 0.0430$
$A_{217}^{\text{PS}}$	102.1	$98 \pm 10$	$10^9 A_s$	2.221	$2.210 \pm 0.071$	$r_{0.01}$	0.0001	$< 0.0449$
$A^{\text{kSZ}}$	0.00	$< 4.03$	$10^9 A_s e^{-2\tau}$	1.8790	$1.879 \pm 0.011$	$\ln(10^{10} A_t)$	-6.08	$-0.63_{-0.68}^{+1.4}$
$A_{100}^{\text{dust}TT}$	7.31	$7.4 \pm 1.9$	$D_{40}$	1236.3	$1251_{-18}^{+14}$	$r_{10}$	0.0000	$< 0.0215$
$A_{143}^{\text{dust}TT}$	8.97	$8.9 \pm 1.8$	$D_{220}$	5725.1	$5727 \pm 38$	$10^9 A_t$	0.000	$< 0.104$
$A_{143 \times 217}^{\text{dust}TT}$	17.90	$17.0 \pm 4.2$	$D_{810}$	2534.9	$2535 \pm 13$	$10^9 A_t e^{-2\tau}$	0.0002	$< 0.0880$
$A_{217}^{\text{dust}TT}$	82.4	$81.7 \pm 7.4$	$D_{1420}$	815.49	$815.2 \pm 4.8$	$f_{2000}^{143}$	28.50	$29.2 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0809 \pm 0.0057$	$D_{2000}$	230.87	$230.6 \pm 1.6$	$f_{2000}^{143 \times 217}$	31.66	$32.0 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04893	$0.0485 \pm 0.0049$	$n_{s,0.002}$	0.96708	$0.9665 \pm 0.0040$	$f_{2000}^{217}$	105.15	$105.6 \pm 1.8$
$A_{100 \times 217}^{\text{dust}EE}$	0.0999	$0.100 \pm 0.032$	$Y_P$	0.245369	$0.245355 \pm 0.000064$	$\chi_{\text{lowTEB}}^2$	10496.98	$10499.1 \pm 2.7$
$A_{143}^{\text{dust}EE}$	0.1004	$0.0998 \pm 0.0068$	$Y_P^{\text{BBN}}$	0.246696	$0.246681 \pm 0.000064$	$\chi_{\text{plik}}^2$	2432.0	$2450.4 \pm 6.7$
$A_{143 \times 217}^{\text{dust}EE}$	0.2228	$0.224 \pm 0.047$	$10^5 D/H$	2.6013	$2.607 \pm 0.027$	$\chi_{6\text{DF}}^2$	0.0373	$0.063 \pm 0.074$
$A_{217}^{\text{dust}EE}$	0.654	$0.65 \pm 0.13$	$\text{Age/Gyr}$	13.8026	$13.805 \pm 0.021$	$\chi_{\text{MGS}}^2$	1.156	$1.23 \pm 0.44$
$A_{100}^{\text{dust}TE}$	0.1393	$0.141 \pm 0.038$	$z_*$	1089.918	$1089.95 \pm 0.23$	$\chi_{\text{DR11CMass}}^2$	2.546	$2.85 \pm 0.59$
$A_{100 \times 143}^{\text{dust}TE}$	0.1302	$0.132 \pm 0.029$	$r_*$	144.674	$144.71 \pm 0.25$	$\chi_{\text{DR11LOWZ}}^2$	0.75	$0.83 \pm 0.54$
$A_{100 \times 217}^{\text{dust}TE}$	0.306	$0.304 \pm 0.084$	$100\theta_*$	1.041009	$1.04103 \pm 0.00029$	$\chi_{\text{prior}}^2$	6.7	$19.2 \pm 5.5$
$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$D_A/\text{Gpc}$	13.8975	$13.900 \pm 0.024$	$\chi_{\text{CMB}}^2$	12929.0	$12949.5 \pm 6.8$
$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.080$	$z_{\text{drag}}$	1059.742	$1059.68 \pm 0.30$	$\chi_{\text{BAO}}^2$	4.49	$4.97 \pm 0.86$

Best-fit  $\chi_{\text{eff}}^2 = 12940.19$ ;  $\Delta\chi_{\text{eff}}^2 = 0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.68$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.20$ ;  $R - 1 = 0.00847$



$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.04 ( $\Delta$  0.01) MGS: 1.16 ( $\Delta$  -0.06) DR11CMASS: 2.55 ( $\Delta$  0.05) DR11LOWZ: 0.75 ( $\Delta$  0.07) CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.98 ( $\Delta$  -0.44) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.99 ( $\Delta$  0.46)

## 20.8 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02226 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.339 \pm 0.080$	$D_A/\text{Gpc}$	13.8891	$13.894 \pm 0.029$
$\Omega_c h^2$	0.11967	$0.1195 \pm 0.0014$	$A_{217}^{\text{dust}TE}$	1.673	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.704	$1059.66 \pm 0.31$
$100\theta_{\text{MC}}$	1.040822	$1.04079 \pm 0.00032$	$c_{100}$	0.99820	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	147.281	$147.34 \pm 0.31$
$\tau$	0.0813	$0.079 \pm 0.017$	$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$k_D$	0.140598	$0.14052 \pm 0.00033$
$\ln(10^{10} A_s)$	3.0970	$3.093 \pm 0.033$	$H_0$	67.36	$67.40 \pm 0.62$	$100\theta_D$	0.160879	$0.16090 \pm 0.00018$
$n_s$	0.96525	$0.9657 \pm 0.0047$	$\Omega_\Lambda$	0.6857	$0.6864 \pm 0.0086$	$z_{\text{eq}}$	3392.1	$3388 \pm 31$
$r$	0.0000	$< 0.0465$	$\Omega_m$	0.3143	$0.3136 \pm 0.0086$	$k_{\text{eq}}$	0.010353	$0.010340 \pm 0.000096$
$y_{\text{cal}}$	1.00013	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14259	$0.1424 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8148	$0.8155 \pm 0.0060$
$A_{217}^{\text{CIB}}$	66.1	$63.6 \pm 6.6$	$\Omega_m h^3$	0.096051	$0.09598 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45022	$0.4506 \pm 0.0030$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\sigma_8$	0.8321	$0.830 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	0.071419	$0.07146 \pm 0.00047$
$A_{143}^{\text{tSZ}}$	7.22	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.4648 \pm 0.0096$	$H(0.57)$	92.908	$92.91 \pm 0.27$
$A_{100}^{\text{PS}}$	253.3	$259 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6230	$0.621 \pm 0.011$	$D_A(0.57)$	1390.9	$1390.5 \pm 8.3$
$A_{143}^{\text{PS}}$	39.7	$43 \pm 8$	$\sigma_8/h^{0.5}$	1.0138	$1.011 \pm 0.016$	$F_{\text{AP}}(0.57)$	0.67673	$0.6766 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	36.2	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5073	$2.500 \pm 0.039$	$f\sigma_8(0.57)$	0.4845	$0.4831 \pm 0.0079$
$A_{217}^{\text{PS}}$	99.0	$98 \pm 10$	$z_{\text{re}}$	10.27	$10.0_{-1.4}^{+1.6}$	$\sigma_8(0.57)$	0.6183	$0.617 \pm 0.010$
$A^{\text{kSZ}}$	0.00	$< 4.06$	$10^9 A_s$	2.213	$2.205 \pm 0.072$	$r_{0.002}$	0.0000	$< 0.0424$
$A_{100}^{\text{dust}TT}$	7.42	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8809	$1.881 \pm 0.012$	$r_{0.01}$	0.0000	$< 0.0444$
$A_{143}^{\text{dust}TT}$	8.87	$8.9 \pm 1.8$	$D_{40}$	1239.7	$1252_{-18}^{+14}$	$\ln(10^{10} A_t)$	-8.08	$-0.65_{-0.68}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.46	$17.0 \pm 4.2$	$D_{220}$	5726.7	$5726 \pm 38$	$r_{10}$	0.0000	$< 0.0213$
$A_{217}^{\text{dust}TT}$	81.9	$81.8 \pm 7.4$	$D_{810}$	2534.8	$2535 \pm 14$	$10^9 A_t$	0.000	$< 0.102$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0808 \pm 0.0057$	$D_{1420}$	814.77	$815.0 \pm 4.8$	$10^9 A_t e^{-2\tau}$	0.0000	$< 0.0872$
$A_{100 \times 143}^{\text{dust}EE}$	0.04897	$0.0484 \pm 0.0049$	$D_{2000}$	230.53	$230.5 \pm 1.6$	$f_{2000}^{143}$	29.04	$29.3 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0989	$0.100 \pm 0.032$	$n_{s,0.002}$	0.96525	$0.9657 \pm 0.0047$	$f_{2000}^{143 \times 217}$	32.03	$32.1 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1003	$0.0997 \pm 0.0068$	$Y_P$	0.245353	$0.245345 \pm 0.000070$	$f_{2000}^{217}$	105.66	$105.7 \pm 1.8$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246679	$0.246671 \pm 0.000071$	$\chi_{\text{lowTEB}}^2$	10497.13	$10499.1 \pm 2.7$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$10^5 D/H$	2.6085	$2.611 \pm 0.029$	$\chi_{\text{plik}}^2$	2431.5	$2450.7 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1405	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.8084	$13.810 \pm 0.025$	$\chi_{\text{JLA}}^2$	706.835	$706.87 \pm 0.29$
$A_{100 \times 143}^{\text{dust}TE}$	0.1310	$0.132 \pm 0.029$	$z_*$	1090.007	$1090.01 \pm 0.28$	$\chi_{\text{prior}}^2$	7.0	$19.1 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.304 \pm 0.084$	$r_*$	144.587	$144.64 \pm 0.31$	$\chi_{\text{CMB}}^2$	12928.6	$12949.8 \pm 6.9$
$A_{143}^{\text{dust}TE}$	0.153	$0.156 \pm 0.054$	$100\theta_*$	1.041011	$1.04099 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.42$ ;  $\Delta\chi_{\text{eff}}^2 = 0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.83$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.19$ ;  $R - 1 = 0.00659$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW.70\_dx11d.2014.10.03.v5c.Ap: 10497.13 ( $\Delta$  -0.23) plik\_dx11dr2.HM.v18.TTTEEE: 2431.47 ( $\Delta$  -0.14) SN - JLA December.2013: 706.84 ( $\Delta$  -0.02)

## 20.9 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02227 \pm 0.00016$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.339 \pm 0.080$	$D_A/\text{Gpc}$	13.8919	$13.895 \pm 0.029$
$\Omega_c h^2$	0.11956	$0.1195 \pm 0.0014$	$A_{217}^{\text{dust}TE}$	1.669	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.704	$1059.67 \pm 0.31$
$100\theta_{\text{MC}}$	1.040794	$1.04080 \pm 0.00032$	$c_{100}$	0.99821	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	147.308	$147.35 \pm 0.31$
$\tau$	0.0822	$0.080 \pm 0.017$	$c_{217}$	0.99591	$0.9960 \pm 0.0014$	$k_D$	0.140569	$0.14052 \pm 0.00033$
$\ln(10^{10} A_s)$	3.0987	$3.093 \pm 0.033$	$H_0$	67.39	$67.43 \pm 0.63$	$100\theta_D$	0.160878	$0.16090 \pm 0.00018$
$n_s$	0.96595	$0.9658 \pm 0.0047$	$\Omega_\Lambda$	0.6862	$0.6867 \pm 0.0087$	$z_{\text{eq}}$	3389.6	$3387 \pm 32$
$r$	0.0000	$< 0.0465$	$\Omega_m$	0.3138	$0.3133 \pm 0.0087$	$k_{\text{eq}}$	0.010345	$0.010337 \pm 0.000097$
$y_{\text{cal}}$	1.00024	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14249	$0.1424 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8152	$0.8157 \pm 0.0061$
$A_{217}^{\text{CIB}}$	64.8	$63.5 \pm 6.6$	$\Omega_m h^3$	0.096023	$0.09599 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45044	$0.4507 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.31	—	$\sigma_8$	0.8326	$0.830 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	0.071444	$0.07148 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	7.02	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.4646 \pm 0.0096$	$H(0.57)$	92.913	$92.92 \pm 0.27$
$A_{100}^{\text{PS}}$	252.5	$259 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6232	$0.621 \pm 0.011$	$D_A(0.57)$	1390.5	$1390.1 \pm 8.5$
$A_{143}^{\text{PS}}$	43.0	$43 \pm 8$	$\sigma_8/h^{0.5}$	1.0143	$1.011 \pm 0.016$	$F_{\text{AP}}(0.57)$	0.67660	$0.6765 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	41.8	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5071	$2.500 \pm 0.040$	$f\sigma_8(0.57)$	0.4847	$0.4831 \pm 0.0079$
$A_{217}^{\text{PS}}$	101.3	$98 \pm 10$	$z_{\text{re}}$	10.35	$10.1_{-1.4}^{+1.6}$	$\sigma_8(0.57)$	0.6189	$0.617 \pm 0.010$
$A^{\text{kSZ}}$	0.00	$< 4.05$	$10^9 A_s$	2.217	$2.206 \pm 0.072$	$r_{0.002}$	0.0000	$< 0.0425$
$A_{100}^{\text{dust}TT}$	7.37	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8810	$1.880 \pm 0.012$	$r_{0.01}$	0.0000	$< 0.0445$
$A_{143}^{\text{dust}TT}$	8.86	$8.9 \pm 1.8$	$D_{40}$	1238.6	$1252_{-18}^{+14}$	$\ln(10^{10} A_t)$	-8.01	$-0.65_{-0.68}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.77	$17.0 \pm 4.2$	$D_{220}$	5725.7	$5727 \pm 38$	$r_{10}$	0.0000	$< 0.0213$
$A_{217}^{\text{dust}TT}$	82.1	$81.8 \pm 7.4$	$D_{810}$	2535.7	$2535 \pm 13$	$10^9 A_t$	0.000	$< 0.102$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0808 \pm 0.0057$	$D_{1420}$	815.28	$815.0 \pm 4.8$	$10^9 A_t e^{-2\tau}$	0.0000	$< 0.0872$
$A_{100 \times 143}^{\text{dust}EE}$	0.04896	$0.0484 \pm 0.0050$	$D_{2000}$	230.72	$230.6 \pm 1.6$	$f_{2000}^{143}$	28.79	$29.3 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.100 \pm 0.032$	$n_{s,0.002}$	0.96595	$0.9658 \pm 0.0047$	$f_{2000}^{143 \times 217}$	31.89	$32.0 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1004	$0.0997 \pm 0.0068$	$Y_P$	0.245353	$0.245347 \pm 0.000071$	$f_{2000}^{217}$	105.43	$105.7 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2241	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246679	$0.246674 \pm 0.000071$	$\chi_{\text{lowTEB}}^2$	10497.06	$10499.1 \pm 2.7$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$10^5 D/H$	2.6085	$2.610 \pm 0.029$	$\chi_{\text{plik}}^2$	2431.8	$2450.7 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1415	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.8086	$13.809 \pm 0.025$	$\chi_{\text{H070p6}}^2$	0.928	$0.94 \pm 0.36$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.132 \pm 0.029$	$z_*$	1089.998	$1090.00 \pm 0.29$	$\chi_{\text{prior}}^2$	6.7	$19.1 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.300	$0.304 \pm 0.084$	$r_*$	144.613	$144.65 \pm 0.31$	$\chi_{\text{CMB}}^2$	12928.8	$12949.9 \pm 6.9$
$A_{143}^{\text{dust}TE}$	0.153	$0.155 \pm 0.054$	$100\theta_*$	1.040989	$1.04100 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.47$ ;  $\Delta\chi_{\text{eff}}^2 = -0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.93$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.18$ ;  $R - 1 = 0.00665$

$\chi_{\text{eff}}^2$ : CMB - lowL.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10497.06 ( $\Delta$  0.06) plik\_dx11dr2\_HM.v18.TTTEEE: 2431.78 ( $\Delta$  0.01) Hubble - H070p6: 0.93 ( $\Delta$  0.03)

20.10 base\_r\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02225 \pm 0.00016$	$A_{143 \times 217}^{\text{dust}TE}$	$0.340 \pm 0.080$	$D_A/\text{Gpc}$	$13.891 \pm 0.029$
$\Omega_c h^2$	$0.1197 \pm 0.0014$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.25$	$z_{\text{drag}}$	$1059.64 \pm 0.31$
$100\theta_{\text{MC}}$	$1.04078 \pm 0.00032$	$c_{100}$	$0.99816 \pm 0.00076$	$r_{\text{drag}}$	$147.31 \pm 0.31$
$\tau$	$0.079 \pm 0.016$	$c_{217}$	$0.9960 \pm 0.0014$	$k_D$	$0.14055 \pm 0.00033$
$\ln(10^{10} A_s)$	$3.093 \pm 0.031$	$H_0$	$67.32 \pm 0.64$	$100\theta_D$	$0.16091 \pm 0.00018$
$n_s$	$0.9653 \pm 0.0047$	$\Omega_\Lambda$	$0.6852 \pm 0.0088$	$z_{\text{eq}}$	$3392 \pm 32$
$r$	$< 0.0459$	$\Omega_m$	$0.3148 \pm 0.0088$	$k_{\text{eq}}$	$0.010353 \pm 0.000098$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\Omega_m h^2$	$0.1426 \pm 0.0013$	$100\theta_{\text{eq}}$	$0.8147 \pm 0.0061$
$A_{217}^{\text{CIB}}$	$63.6 \pm 6.6$	$\Omega_m h^3$	$0.09598 \pm 0.00030$	$100\theta_{s,\text{eq}}$	$0.4502 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.830 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	$0.07140 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	$0.4659 \pm 0.0096$	$H(0.57)$	$92.88 \pm 0.27$
$A_{100}^{\text{PS}}$	$259 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	$0.622 \pm 0.010$	$D_A(0.57)$	$1391.5 \pm 8.6$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8/h^{0.5}$	$1.012 \pm 0.016$	$F_{\text{AP}}(0.57)$	$0.6768 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	$2.503 \pm 0.038$	$f\sigma_8(0.57)$	$0.4836 \pm 0.0077$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$z_{\text{re}}$	$10.0 \pm 1.4$	$\sigma_8(0.57)$	$0.6170 \pm 0.0096$
$A^{\text{kSZ}}$	$< 4.07$	$10^9 A_s$	$2.205_{-0.077}^{+0.067}$	$r_{0.002}$	$< 0.0418$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.881 \pm 0.012$	$r_{0.01}$	$< 0.0439$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$D_{40}$	$1253_{-18}^{+14}$	$\ln(10^{10} A_t)$	$-0.67_{-0.68}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	$17.0 \pm 4.2$	$D_{220}$	$5726 \pm 38$	$r_{10}$	$< 0.0211$
$A_{217}^{\text{dust}TT}$	$81.8 \pm 7.4$	$D_{810}$	$2535 \pm 14$	$10^9 A_t$	$< 0.101$
$A_{100}^{\text{dust}EE}$	$0.0808 \pm 0.0057$	$D_{1420}$	$814.9 \pm 4.8$	$10^9 A_t e^{-2\tau}$	$< 0.0863$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0483 \pm 0.0050$	$D_{2000}$	$230.5 \pm 1.6$	$f_{2000}^{143}$	$29.4 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	$0.100 \pm 0.033$	$n_{s,0.002}$	$0.9653 \pm 0.0047$	$f_{2000}^{143 \times 217}$	$32.1 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.0996 \pm 0.0068$	$Y_P$	$0.245339 \pm 0.000071$	$f_{2000}^{217}$	$105.8 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	$0.246665 \pm 0.000071$	$\chi_{\text{lowTEB}}^2$	$10499.2 \pm 2.6$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$10^5 D/H$	$2.614 \pm 0.030$	$\chi_{\text{plik}}^2$	$2450.6 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	$13.812 \pm 0.025$	$\chi_{\text{prior}}^2$	$19.1 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$z_*$	$1090.04 \pm 0.29$	$\chi_{\text{CMB}}^2$	$12949.8 \pm 6.8$
$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.084$	$r_*$	$144.60 \pm 0.32$		
$A_{143}^{\text{dust}TE}$	$0.156 \pm 0.054$	$100\theta_*$	$1.04097 \pm 0.00031$		

$$\bar{\chi}_{\text{eff}}^2 = 12968.88; \Delta\bar{\chi}_{\text{eff}}^2 = 1.20; R - 1 = 0.00728$$

## 20.11 base\_r\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022403	$0.02241 \pm 0.00025$	$\sigma_8 \Omega_m^{0.25}$	0.5998	$0.598 \pm 0.017$	$k_D$	0.14029	$0.14027 \pm 0.00059$
$\Omega_c h^2$	0.11771	$0.1176 \pm 0.0020$	$\sigma_8/h^{0.5}$	0.9793	$0.977 \pm 0.026$	$100\theta_D$	0.160799	$0.16081 \pm 0.00031$
$100\theta_{MC}$	1.04101	$1.04105 \pm 0.00052$	$\langle d^2 \rangle^{1/2}$	2.407	$2.399 \pm 0.057$	$z_{eq}$	3348.4	$3346 \pm 46$
$\tau$	0.0625	$0.061 \pm 0.021$	$z_{re}$	8.45	$8.1^{+2.3}_{-1.9}$	$k_{eq}$	0.010220	$0.01021 \pm 0.00014$
$\ln(10^{10} A_s)$	3.0497	$3.046 \pm 0.045$	$10^9 A_s$	2.111	$2.105^{+0.092}_{-0.10}$	$100\theta_{eq}$	0.8232	$0.8238 \pm 0.0087$
$n_s$	0.9756	$0.977 \pm 0.011$	$10^9 A_s e^{-2\tau}$	1.8628	$1.863 \pm 0.019$	$100\theta_{s,eq}$	0.45453	$0.4548 \pm 0.0045$
$r$	0.0013	$< 0.0649$	$D_{40}$	1200.8	$1217 \pm 26$	$r_{drag}/D_V(0.57)$	0.07208	$0.07214 \pm 0.00069$
$y_{cal}$	0.99998	$1.0001 \pm 0.0025$	$D_{220}$	5673	$5670 \pm 57$	$H(0.57)$	93.252	$93.29 \pm 0.40$
$A_{100}^{dustTE}$	0.1369	$0.138 \pm 0.038$	$D_{810}$	2526.8	$2528 \pm 26$	$D_A(0.57)$	1379.6	$1379 \pm 12$
$A_{100 \times 143}^{dustTE}$	0.1303	$0.133 \pm 0.029$	$D_{1420}$	816.7	$818 \pm 12$	$F_{AP}(0.57)$	0.67372	$0.6735 \pm 0.0030$
$A_{100 \times 217}^{dustTE}$	0.308	$0.303 \pm 0.084$	$D_{2000}$	231.16	$231.5 \pm 4.4$	$f\sigma_8(0.57)$	0.4679	$0.467 \pm 0.013$
$A_{143}^{dustTE}$	0.143	$0.153 \pm 0.054$	$n_{s,0.002}$	0.9756	$0.977 \pm 0.011$	$\sigma_8(0.57)$	0.6039	$0.603 \pm 0.014$
$A_{143 \times 217}^{dustTE}$	0.347	$0.334 \pm 0.081$	$Y_P$	0.245407	$0.24541 \pm 0.00011$	$r_{0.002}$	0.0012	$< 0.0620$
$A_{217}^{dustTE}$	1.680	$1.65 \pm 0.26$	$Y_P^{BBN}$	0.246734	$0.24674 \pm 0.00011$	$r_{0.01}$	0.0013	$< 0.0634$
$c_{100}$	0.99920	$0.9992 \pm 0.0010$	$10^5 D/H$	2.5851	$2.585 \pm 0.046$	$\ln(10^{10} A_t)$	-3.58	$-0.36^{+1.4}_{-0.67}$
$H_0$	68.22	$68.29 \pm 0.89$	Age/Gyr	13.7816	$13.779 \pm 0.038$	$r_{10}$	0.0006	$< 0.0316$
$\Omega_\Lambda$	0.6975	$0.698 \pm 0.012$	$z_*$	1089.679	$1089.66 \pm 0.41$	$10^9 A_t$	0.003	$< 0.136$
$\Omega_m$	0.3025	$0.302 \pm 0.012$	$r_*$	144.999	$145.03 \pm 0.48$	$10^9 A_t e^{-2\tau}$	0.002	$< 0.121$
$\Omega_m h^2$	0.14076	$0.1407 \pm 0.0019$	$100\theta_*$	1.04119	$1.04123 \pm 0.00052$	$\chi_{lowTEB}^2$	10493.14	$10495.7 \pm 2.5$
$\Omega_m h^3$	0.09603	$0.09603 \pm 0.00053$	$D_A/\text{Gpc}$	13.9262	$13.928 \pm 0.045$	$\chi_{plikTE}^2$	931.87	$939.4 \pm 4.3$
$\sigma_8$	0.8088	$0.807 \pm 0.020$	$z_{drag}$	1059.86	$1059.85 \pm 0.54$	$\chi_{prior}^2$	2.15	$7.8 \pm 3.6$
$\sigma_8 \Omega_m^{0.5}$	0.4448	$0.444 \pm 0.015$	$r_{drag}$	147.66	$147.69 \pm 0.50$	$\chi_{CMB}^2$	11425.01	$11435.0 \pm 4.5$

Best-fit  $\chi_{eff}^2 = 11427.16$ ;  $\Delta\chi_{eff}^2 = -0.00$ ;  $\bar{\chi}_{eff}^2 = 11442.90$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.72$ ;  $R - 1 = 0.00749$

$\chi_{eff}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.14 ( $\Delta$  -0.36) plik\_dx11dr2\_HM\_v18\_TE: 931.87 ( $\Delta$  0.14)

## 20.12 base\_r\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02412	$0.0242 \pm 0.0014$	$\sigma_8/h^{0.5}$	0.9411	$0.932 \pm 0.046$	$100\theta_D$	0.15869	$0.1588^{+0.0013}_{-0.0015}$
$\Omega_c h^2$	0.11237	$0.1116 \pm 0.0048$	$\langle d^2 \rangle^{1/2}$	2.355	$2.326 \pm 0.089$	$z_{\text{eq}}$	3262	$3246^{+85}_{-95}$
$100\theta_{\text{MC}}$	1.04010	$1.04020 \pm 0.00094$	$z_{\text{re}}$	8.42	$8.0^{+2.1}_{-1.8}$	$k_{\text{eq}}$	0.009955	$0.00991^{+0.00026}_{-0.00029}$
$\tau$	0.0675	$0.064 \pm 0.021$	$10^9 A_s$	2.168	$2.150 \pm 0.093$	$100\theta_{\text{eq}}$	0.8437	$0.848 \pm 0.021$
$\ln(10^{10} A_s)$	3.0764	$3.067 \pm 0.043$	$10^9 A_s e^{-2\tau}$	1.8942	$1.889 \pm 0.026$	$100\theta_{s,\text{eq}}$	0.4638	$0.4657 \pm 0.0098$
$n_s$	0.9867	$0.993 \pm 0.015$	$D_{40}$	1223.0	$1235 \pm 31$	$r_{\text{drag}}/D_V(0.57)$	0.07383	$0.0742 \pm 0.0019$
$r$	0.0000	$< 0.0894$	$D_{220}$	5991	$5971 \pm 220$	$H(0.57)$	94.99	$95.2^{+1.6}_{-2.0}$
$y_{\text{cal}}$	1.00010	$0.99998 \pm 0.0025$	$D_{810}$	2592.3	$2591 \pm 41$	$D_A(0.57)$	1336.9	$1332 \pm 40$
$A_{100}^{\text{dustEE}}$	0.0826	$0.0823 \pm 0.0059$	$D_{1420}$	846.3	$848 \pm 20$	$F_{\text{AP}}(0.57)$	0.6651	$0.6642^{+0.0074}_{-0.0087}$
$A_{100 \times 143}^{\text{dustEE}}$	0.0500	$0.0495 \pm 0.0054$	$D_{2000}$	242.2	$242.8 \pm 7.7$	$f\sigma_8(0.57)$	0.4503	$0.446 \pm 0.022$
$A_{100 \times 217}^{\text{dustEE}}$	0.0983	$0.099 \pm 0.033$	$n_{s,0.002}$	0.9867	$0.993 \pm 0.015$	$\sigma_8(0.57)$	0.6017	$0.598 \pm 0.015$
$A_{143}^{\text{dustEE}}$	0.1013	$0.1008 \pm 0.0072$	$Y_P$	0.24613	$0.24614 \pm 0.00055$	$r_{0.002}$	0.0000	$< 0.0906$
$A_{143 \times 217}^{\text{dustEE}}$	0.2224	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.24746	$0.24747 \pm 0.00055$	$r_{0.01}$	0.0000	$< 0.0899$
$A_{217}^{\text{dustEE}}$	0.645	$0.65 \pm 0.13$	$10^5 D/H$	2.296	$2.30^{+0.19}_{-0.23}$	$\ln(10^{10} A_t)$	-6.86	$-0.04^{+1.4}_{-0.66}$
$H_0$	71.31	$71.7 \pm 3.0$	Age/Gyr	13.611	$13.60 \pm 0.17$	$r_{10}$	0.0000	$< 0.0454$
$\Omega_\Lambda$	0.7303	$0.733^{+0.033}_{-0.026}$	$z_*$	1087.24	$1087.2^{+1.7}_{-2.0}$	$10^9 A_t$	0.000	$< 0.192$
$\Omega_m$	0.2697	$0.267^{+0.026}_{-0.033}$	$r_*$	145.08	$145.22 \pm 0.68$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.169$
$\Omega_m h^2$	0.13714	$0.1365^{+0.0036}_{-0.0040}$	$100\theta_*$	1.04011	$1.04020 \pm 0.00090$	$\chi_{\text{lowTEB}}^2$	10493.64	$10496.1 \pm 2.8$
$\Omega_m h^3$	0.09779	$0.0978^{+0.0019}_{-0.0022}$	$D_A/\text{Gpc}$	13.948	$13.961 \pm 0.064$	$\chi_{\text{plikEE}}^2$	751.05	$758.9 \pm 4.5$
$\sigma_8$	0.7947	$0.789 \pm 0.026$	$z_{\text{drag}}$	1063.33	$1063.4 \pm 2.7$	$\chi_{\text{prior}}^2$	4.11	$8.2 \pm 3.5$
$\sigma_8 \Omega_m^{0.5}$	0.4127	$0.408^{+0.032}_{-0.036}$	$r_{\text{drag}}$	147.20	$147.34 \pm 0.80$	$\chi_{\text{CMB}}^2$	11244.68	$11255.0 \pm 4.8$
$\sigma_8 \Omega_m^{0.25}$	0.5727	$0.567 \pm 0.032$	$k_D$	0.14194	$0.1418 \pm 0.0014$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.79$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11263.21$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.39$ ;  $R - 1 = 0.00738$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.64 ( $\Delta$  0.02) plik\_dx11dr2\_HM.v18\_EE: 751.05 ( $\Delta$  -0.15)

### 20.13 base\_r\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022281	$0.02227 \pm 0.00025$	$\sigma_8 \Omega_m^{0.25}$	0.5975	$0.597 \pm 0.016$	$k_D$	0.14032	$0.14030 \pm 0.00058$
$\Omega_c h^2$	0.11868	$0.1187 \pm 0.0021$	$\sigma_8/h^{0.5}$	0.9740	$0.974 \pm 0.024$	$100\theta_D$	0.160928	$0.16094 \pm 0.00032$
$100\theta_{MC}$	1.04095	$1.04092 \pm 0.00051$	$\langle d^2 \rangle^{1/2}$	2.418	$2.412 \pm 0.056$	$z_{eq}$	3368.6	$3368 \pm 47$
$\tau$	0.0525	$0.052 \pm 0.019$	$z_{re}$	7.50	$7.3^{+2.2}_{-1.8}$	$k_{eq}$	0.010281	$0.01028 \pm 0.00014$
$\ln(10^{10} A_s)$	3.0311	$3.029 \pm 0.041$	$10^9 A_s$	2.072	$2.069 \pm 0.085$	$100\theta_{eq}$	0.8191	$0.8192 \pm 0.0090$
$n_s$	0.9646	$0.966 \pm 0.012$	$10^9 A_s e^{-2\tau}$	1.8654	$1.864 \pm 0.019$	$100\theta_{s,eq}$	0.45249	$0.4526 \pm 0.0046$
$r$	0.105	$< 0.205$	$D_{40}$	1260.8	$1279^{+39}_{-59}$	$r_{drag}/D_V(0.57)$	0.07175	$0.07175 \pm 0.00071$
$y_{cal}$	1.00002	$1.0000 \pm 0.0025$	$D_{220}$	5707	$5694 \pm 59$	$H(0.57)$	93.040	$93.04 \pm 0.41$
$A_{100}^{dustTE}$	0.1408	$0.141 \pm 0.038$	$D_{810}$	2519.3	$2519 \pm 26$	$D_A(0.57)$	1385.9	$1386 \pm 12$
$A_{100 \times 143}^{dustTE}$	0.1293	$0.135 \pm 0.029$	$D_{1420}$	809.6	$810 \pm 12$	$F_{AP}(0.57)$	0.67527	$0.6753 \pm 0.0032$
$A_{100 \times 217}^{dustTE}$	0.298	$0.303 \pm 0.084$	$D_{2000}$	228.18	$228.4 \pm 4.5$	$f\sigma_8(0.57)$	0.4654	$0.465 \pm 0.012$
$A_{143}^{dustTE}$	0.153	$0.159 \pm 0.054$	$n_{s,0.002}$	0.9646	$0.966 \pm 0.012$	$\sigma_8(0.57)$	0.5971	$0.597^{+0.013}_{-0.014}$
$A_{143 \times 217}^{dustTE}$	0.351	$0.336 \pm 0.081$	$Y_P$	0.245354	$0.24535 \pm 0.00012$	$r_{0.002}$	0.098	$< 0.200$
$A_{217}^{dustTE}$	1.701	$1.65 \pm 0.26$	$Y_P^{BBN}$	0.246680	$0.24667 \pm 0.00012$	$r_{0.01}$	0.101	$< 0.202$
$c_{100}$	0.99937	$0.9992 \pm 0.0010$	$10^5 D/H$	2.6082	$2.610 \pm 0.048$	$\ln(10^{10} A_t)$	0.78	$0.84^{+1.2}_{-0.49}$
$H_0$	67.75	$67.75 \pm 0.92$	Age/Gyr	13.8003	$13.802 \pm 0.039$	$r_{10}$	0.050	$< 0.104$
$\Omega_\Lambda$	0.6915	$0.691 \pm 0.013$	$z_*$	1089.916	$1089.93 \pm 0.43$	$10^9 A_t$	0.218	$< 0.423$
$\Omega_m$	0.3085	$0.309 \pm 0.013$	$r_*$	144.841	$144.85 \pm 0.49$	$10^9 A_t e^{-2\tau}$	0.196	$< 0.381$
$\Omega_m h^2$	0.14161	$0.1416 \pm 0.0020$	$100\theta_*$	1.04114	$1.04111 \pm 0.00050$	$\chi_{lowEB}^2$	5430.50	$5431.3 \pm 1.3$
$\Omega_m h^3$	0.09594	$0.09591 \pm 0.00053$	$D_A/\text{Gpc}$	13.9118	$13.913 \pm 0.046$	$\chi_{plikTE}^2$	931.42	$939.4 \pm 4.2$
$\sigma_8$	0.8017	$0.801^{+0.017}_{-0.019}$	$z_{drag}$	1059.63	$1059.61 \pm 0.54$	$\chi_{prior}^2$	1.85	$7.7 \pm 3.6$
$\sigma_8 \Omega_m^{0.5}$	0.4453	$0.445 \pm 0.015$	$r_{drag}$	147.54	$147.55 \pm 0.50$	$\chi_{CMB}^2$	6361.91	$6370.8 \pm 4.3$

Best-fit  $\chi_{eff}^2 = 6363.76$ ;  $\Delta\chi_{eff}^2 = -0.13$ ;  $\bar{\chi}_{eff}^2 = 6378.47$ ;  $\Delta\bar{\chi}_{eff}^2 = 0.62$ ;  $R - 1 = 0.00621$

$\chi_{eff}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5430.50 ( $\Delta$  -0.27) plik\_dx11dr2\_HM\_v18\_TE: 931.42 ( $\Delta$  0.18)

## 20.14 base\_r\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02376	$0.0238^{+0.0013}_{-0.0014}$	$\sigma_8/h^{0.5}$	0.9314	$0.926 \pm 0.047$	$100\theta_D$	0.15911	$0.1592^{+0.0013}_{-0.0016}$
$\Omega_c h^2$	0.1123	$0.1120 \pm 0.0052$	$\langle d^2 \rangle^{1/2}$	2.319	$2.30 \pm 0.11$	$z_{\text{eq}}$	3252	$3246 \pm 100$
$100\theta_{\text{MC}}$	1.04011	$1.04018 \pm 0.00097$	$z_{\text{re}}$	7.48	$7.0^{+2.0}_{-1.7}$	$k_{\text{eq}}$	0.009924	$0.00991 \pm 0.00031$
$\tau$	0.0565	$0.053 \pm 0.018$	$10^9 A_s$	2.105	$2.092^{+0.085}_{-0.098}$	$100\theta_{\text{eq}}$	0.8447	$0.847 \pm 0.023$
$\ln(10^{10} A_s)$	3.0471	$3.040 \pm 0.042$	$10^9 A_s e^{-2\tau}$	1.8805	$1.880 \pm 0.030$	$100\theta_{s,\text{eq}}$	0.4646	$0.466 \pm 0.011$
$n_s$	0.9883	$0.991 \pm 0.019$	$D_{40}$	1425	$1426^{+88}_{-140}$	$r_{\text{drag}}/D_V(0.57)$	0.07380	$0.0740^{+0.0019}_{-0.0022}$
$r$	0.534	$0.52 \pm 0.27$	$D_{220}$	5914	$5911 \pm 220$	$H(0.57)$	94.72	$94.9^{+1.6}_{-2.0}$
$y_{\text{cal}}$	0.99995	$1.0003 \pm 0.0024$	$D_{810}$	2576.6	$2577 \pm 42$	$D_A(0.57)$	1341.4	$1339 \pm 41$
$A_{100}^{\text{dustEE}}$	0.0753	$0.0748 \pm 0.0069$	$D_{1420}$	840.8	$842 \pm 20$	$F_{\text{AP}}(0.57)$	0.6654	$0.6652 \pm 0.0084$
$A_{100 \times 143}^{\text{dustEE}}$	0.0412	$0.0413 \pm 0.0066$	$D_{2000}$	240.0	$240.3 \pm 7.9$	$f\sigma_8(0.57)$	0.4452	$0.442 \pm 0.023$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.0996 \pm 0.033$	$n_{s,0.002}$	0.9883	$0.991 \pm 0.019$	$\sigma_8(0.57)$	0.5941	$0.591 \pm 0.014$
$A_{143}^{\text{dustEE}}$	0.0915	$0.0922 \pm 0.0082$	$Y_P$	0.24598	$0.24598 \pm 0.00055$	$r_{0.002}$	0.642	$0.69^{+0.18}_{-0.68}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2158	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.24731	$0.24731 \pm 0.00055$	$r_{0.01}$	0.583	$0.59^{+0.27}_{-0.45}$
$A_{217}^{\text{dustEE}}$	0.677	$0.65 \pm 0.13$	$10^5 D/H$	2.352	$2.36^{+0.20}_{-0.24}$	$\ln(10^{10} A_t)$	2.42	$2.17^{+0.87}_{-0.29}$
$H_0$	71.04	$71.3 \pm 3.1$	Age/Gyr	13.646	$13.64^{+0.18}_{-0.16}$	$r_{10}$	0.342	$< 0.462$
$\Omega_\Lambda$	0.7291	$0.729^{+0.034}_{-0.028}$	$z_*$	1087.63	$1087.6^{+1.8}_{-2.0}$	$10^9 A_t$	1.12	$1.08 \pm 0.55$
$\Omega_m$	0.2709	$0.271^{+0.028}_{-0.034}$	$r_*$	145.38	$145.43^{+0.86}_{-0.97}$	$10^9 A_t e^{-2\tau}$	1.00	$0.98 \pm 0.51$
$\Omega_m h^2$	0.13671	$0.1365 \pm 0.0043$	$100\theta_*$	1.04016	$1.04023 \pm 0.00094$	$\chi_{\text{lowEB}}^2$	5429.68	$5430.6 \pm 1.5$
$\Omega_m h^3$	0.09712	$0.0972^{+0.0019}_{-0.0021}$	$D_A/\text{Gpc}$	13.976	$13.980^{+0.080}_{-0.090}$	$\chi_{\text{plikEE}}^2$	750.65	$758.9 \pm 4.4$
$\sigma_8$	0.7850	$0.781 \pm 0.026$	$z_{\text{drag}}$	1062.53	$1062.6 \pm 2.7$	$\chi_{\text{prior}}^2$	2.43	$7.0 \pm 3.3$
$\sigma_8 \Omega_m^{0.5}$	0.4086	$0.406 \pm 0.035$	$r_{\text{drag}}$	147.61	$147.67^{+0.94}_{-1.1}$	$\chi_{\text{CMB}}^2$	6180.33	$6189.5 \pm 4.5$
$\sigma_8 \Omega_m^{0.25}$	0.5664	$0.563 \pm 0.033$	$k_D$	0.14127	$0.1412^{+0.0017}_{-0.0015}$			

Best-fit  $\chi_{\text{eff}}^2 = 6182.76$ ;  $\Delta\chi_{\text{eff}}^2 = -2.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 6196.45$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.51$ ;  $R - 1 = 0.00867$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 5429.68 ( $\Delta$  -1.05) plik\_dx11dr2\_HM\_v18\_EE: 750.65 ( $\Delta$  -0.10)



## 20.15 base\_r\_plikHM\_TT\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02226 \pm 0.00023$	$\Omega_m h^3$	0.095956	$0.09588 \pm 0.00045$	$100\theta_D$	0.160952	$0.16098 \pm 0.00026$
$\Omega_c h^2$	0.11850	$0.1183 \pm 0.0020$	$\sigma_8$	0.8160	$0.8149 \pm 0.0093$	$z_{\text{eq}}$	3364.2	$3360 \pm 45$
$100\theta_{\text{MC}}$	1.041044	$1.04103 \pm 0.00046$	$\sigma_8 \Omega_m^{0.5}$	0.4523	$0.4512 \pm 0.0089$	$k_{\text{eq}}$	0.010268	$0.01026 \pm 0.00014$
$\tau$	0.0671	$0.067 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6075	$0.6063 \pm 0.0077$	$100\theta_{\text{eq}}$	0.8200	$0.8208 \pm 0.0088$
$\ln(10^{10} A_s)$	3.0649	$3.063 \pm 0.030$	$\sigma_8/h^{0.5}$	0.9906	$0.989 \pm 0.011$	$100\theta_{s,\text{eq}}$	0.45294	$0.4534 \pm 0.0045$
$n_s$	0.9682	$0.9688 \pm 0.0061$	$\langle d^2 \rangle^{1/2}$	2.4493	$2.445 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	0.07183	$0.07188 \pm 0.00070$
$r$	0.0000	$< 0.0537$	$z_{\text{re}}$	8.94	$8.8^{+1.7}_{-1.4}$	$H(0.57)$	93.083	$93.09 \pm 0.41$
$y_{\text{cal}}$	1.00011	$1.0002 \pm 0.0025$	$10^9 A_s$	2.143	$2.141 \pm 0.064$	$D_A(0.57)$	1384.6	$1384 \pm 12$
$A_{217}^{\text{CIB}}$	67.4	$64.2 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8738	$1.873 \pm 0.013$	$F_{\text{AP}}(0.57)$	0.67494	$0.6748 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1225.2	$1239^{+15}_{-19}$	$f\sigma_8(0.57)$	0.4733	$0.4725 \pm 0.0054$
$A_{143}^{\text{tSZ}}$	7.16	$5.1 \pm 2.0$	$D_{220}$	5717.3	$5713 \pm 41$	$\sigma_8(0.57)$	0.6081	$0.6075 \pm 0.0084$
$A_{100}^{\text{PS}}$	254.3	$259 \pm 28$	$D_{810}$	2532.7	$2532 \pm 14$	$r_{0.002}$	0.0000	$< 0.0495$
$A_{143}^{\text{PS}}$	39.3	$44 \pm 8$	$D_{1420}$	815.0	$814.8 \pm 5.2$	$r_{0.01}$	0.0000	$< 0.0516$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$D_{2000}$	230.26	$230.1 \pm 1.9$	$\ln(10^{10} A_t)$	-7.20	$-0.54^{+1.4}_{-0.66}$
$A_{217}^{\text{PS}}$	97.2	$97 \pm 10$	$n_{s,0.002}$	0.9682	$0.9688 \pm 0.0061$	$r_{10}$	0.0000	$< 0.0251$
$A^{\text{kSZ}}$	0.00	$< 4.82$	$Y_{\text{P}}$	0.245353	$0.24534 \pm 0.00010$	$10^9 A_t$	0.000	$< 0.115$
$A_{100}^{\text{dustTT}}$	7.51	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24667 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.101$
$A_{143}^{\text{dustTT}}$	9.03	$9.1 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.6085	$2.612 \pm 0.043$	$f_{2000}^{143}$	29.99	$30.3 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.72	$17.2 \pm 4.2$	$\text{Age}/\text{Gyr}$	13.7966	$13.798 \pm 0.038$	$f_{2000}^{143 \times 217}$	32.54	$32.6 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.1	$81.9 \pm 7.4$	$z_*$	1089.902	$1089.92 \pm 0.41$	$f_{2000}^{217}$	106.13	$106.2 \pm 2.0$
$c_{100}$	0.99793	$0.99787 \pm 0.00078$	$r_*$	144.889	$144.95 \pm 0.45$	$\chi_{\text{lensing}}^2$	9.29	$9.8 \pm 1.4$
$c_{217}$	0.99603	$0.9960 \pm 0.0015$	$100\theta_*$	1.041240	$1.04123 \pm 0.00045$	$\chi_{\text{lowTEB}}^2$	10494.92	$10497.1 \pm 2.0$
$H_0$	67.85	$67.89 \pm 0.92$	$D_A/\text{Gpc}$	13.9151	$13.921 \pm 0.042$	$\chi_{\text{plik}}^2$	766.2	$779.7 \pm 5.6$
$\Omega_\Lambda$	0.6928	$0.693 \pm 0.012$	$z_{\text{drag}}$	1059.628	$1059.56 \pm 0.47$	$\chi_{\text{prior}}^2$	2.05	$7.4 \pm 3.6$
$\Omega_m$	0.3072	$0.307 \pm 0.012$	$r_{\text{drag}}$	147.589	$147.66 \pm 0.45$	$\chi_{\text{CMB}}^2$	11270.4	$11286.6 \pm 5.8$
$\Omega_m h^2$	0.14143	$0.1413 \pm 0.0019$	$k_D$	0.140272	$0.14019 \pm 0.00048$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.43$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 11294.05$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.75$ ;  $R - 1 = 0.00754$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.29 ( $\Delta$  0.11) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.92 ( $\Delta$  0.06) plik\_dx11dr2\_HM\_v18\_TT: 766.18 ( $\Delta$  -0.15)

## 20.16 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022268	$0.02225 \pm 0.00020$	$\sigma_8 \Omega_m^{0.5}$	0.4526	$0.4518 \pm 0.0066$	$100\theta_{s,eq}$	0.45290	$0.4530 \pm 0.0028$
$\Omega_c h^2$	0.11852	$0.1185 \pm 0.0012$	$\sigma_8 \Omega_m^{0.25}$	0.6078	$0.6067 \pm 0.0069$	$r_{drag}/D_V(0.57)$	0.071813	$0.07182 \pm 0.00042$
$100\theta_{MC}$	1.041008	$1.04102 \pm 0.00041$	$\sigma_8/h^{0.5}$	0.9910	$0.989 \pm 0.011$	$H(0.57)$	93.063	$93.05 \pm 0.27$
$\tau$	0.0673	$0.066 \pm 0.013$	$\langle d^2 \rangle^{1/2}$	2.4500	$2.445 \pm 0.025$	$D_A(0.57)$	1385.0	$1385.3 \pm 7.6$
$\ln(10^{10} A_s)$	3.0651	$3.061 \pm 0.024$	$z_{re}$	8.96	$8.8_{-1.2}^{+1.3}$	$F_{AP}(0.57)$	0.67501	$0.6750 \pm 0.0019$
$n_s$	0.96816	$0.9683 \pm 0.0045$	$10^9 A_s$	2.144	$2.136 \pm 0.051$	$f\sigma_8(0.57)$	0.4735	$0.4726 \pm 0.0052$
$r$	0.0001	$< 0.0533$	$10^9 A_s e^{-2\tau}$	1.8738	$1.873 \pm 0.011$	$\sigma_8(0.57)$	0.6081	$0.6070 \pm 0.0072$
$y_{cal}$	1.00016	$1.0002 \pm 0.0025$	$D_{40}$	1225.1	$1240_{-19}^{+14}$	$r_{0.002}$	0.0001	$< 0.0492$
$A_{217}^{CIB}$	67.4	$64.3 \pm 6.6$	$D_{220}$	5715.9	$5712 \pm 40$	$r_{0.01}$	0.0001	$< 0.0512$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{810}$	2532.5	$2532 \pm 14$	$\ln(10^{10} A_t)$	-5.92	$-0.54_{-0.65}^{+1.4}$
$A_{143}^{tSZ}$	7.19	$5.1 \pm 2.0$	$D_{1420}$	814.9	$814.7 \pm 5.1$	$r_{10}$	0.0001	$< 0.0249$
$A_{100}^{PS}$	256.3	$259 \pm 28$	$D_{2000}$	230.21	$230.1 \pm 1.8$	$10^9 A_t$	0.000	$< 0.114$
$A_{143}^{PS}$	39.5	$44 \pm 8$	$n_{s,0.002}$	0.96816	$0.9683 \pm 0.0045$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.0999$
$A_{143 \times 217}^{PS}$	32.9	$39_{-10}^{+10}$	$Y_P$	0.245348	$0.245336 \pm 0.000090$	$f_{2000}^{143}$	30.08	$30.4 \pm 2.8$
$A_{217}^{PS}$	97.3	$97 \pm 10$	$Y_P^{BBN}$	0.246674	$0.246662 \pm 0.000090$	$f_{2000}^{143 \times 217}$	32.64	$32.7 \pm 2.0$
$A^{kSZ}$	0.00	$< 4.83$	$10^5 D/H$	2.6106	$2.615 \pm 0.038$	$f_{2000}^{217}$	106.15	$106.2 \pm 1.9$
$A_{100}^{dustTT}$	7.34	$7.4 \pm 1.9$	Age/Gyr	13.7990	$13.801 \pm 0.029$	$\chi_{lensing}^2$	9.34	$9.8 \pm 1.4$
$A_{143}^{dustTT}$	9.14	$9.1 \pm 1.8$	$z_*$	1089.918	$1089.95 \pm 0.30$	$\chi_{lowTEB}^2$	10494.92	$10496.9 \pm 1.9$
$A_{143 \times 217}^{dustTT}$	17.68	$17.3 \pm 4.2$	$r_*$	144.893	$144.91 \pm 0.31$	$\chi_{plik}^2$	766.2	$779.2 \pm 5.5$
$A_{217}^{dustTT}$	81.9	$82.0 \pm 7.4$	$100\theta_*$	1.041201	$1.04121 \pm 0.00041$	$\chi_{6DF}^2$	0.0062	$0.045 \pm 0.062$
$c_{100}$	0.99795	$0.99786 \pm 0.00078$	$D_A/Gpc$	13.9159	$13.918 \pm 0.031$	$\chi_{MGS}^2$	1.47	$1.54 \pm 0.56$
$c_{217}$	0.99596	$0.9960 \pm 0.0014$	$z_{drag}$	1059.589	$1059.54 \pm 0.44$	$\chi_{DR11CMass}^2$	2.402	$2.83 \pm 0.61$
$H_0$	67.82	$67.81 \pm 0.56$	$r_{drag}$	147.598	$147.62 \pm 0.34$	$\chi_{DR11LOWZ}^2$	0.426	$0.56 \pm 0.50$
$\Omega_\Lambda$	0.6925	$0.6924 \pm 0.0074$	$k_D$	0.140256	$0.14021 \pm 0.00043$	$\chi_{prior}^2$	1.97	$7.4 \pm 3.6$
$\Omega_m$	0.3075	$0.3076 \pm 0.0074$	$100\theta_D$	0.160960	$0.16100 \pm 0.00025$	$\chi_{CMB}^2$	11270.5	$11285.9 \pm 5.7$
$\Omega_m h^2$	0.14143	$0.1414 \pm 0.0012$	$z_{eq}$	3364.4	$3364 \pm 29$	$\chi_{BAO}^2$	4.31	$4.97 \pm 0.91$
$\Omega_m h^3$	0.095920	$0.09588 \pm 0.00045$	$k_{eq}$	0.010269	$0.010267 \pm 0.000087$			
$\sigma_8$	0.8161	$0.8147 \pm 0.0089$	$100\theta_{eq}$	0.8199	$0.8200 \pm 0.0054$			

Best-fit  $\chi_{eff}^2 = 11276.77$ ;  $\Delta\chi_{eff}^2 = 0.03$ ;  $\bar{\chi}_{eff}^2 = 11298.35$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.66$ ;  $R - 1 = 0.00674$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.00) MGS: 1.47 ( $\Delta$  0.07) DR11CMass: 2.40 ( $\Delta$  0.00) DR11LOWZ: 0.43 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.34 ( $\Delta$  0.10) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.92 ( $\Delta$  0.06) plik\_dx11dr2\_HM\_v18.TT: 766.23 ( $\Delta$  0.03)

20.17 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022284	$0.02227 \pm 0.00020$	$\sigma_8 \Omega_m^{0.5}$	0.4518	$0.4509 \pm 0.0065$	$100\theta_{s,eq}$	0.45316	$0.4535 \pm 0.0027$
$\Omega_c h^2$	0.11841	$0.1183 \pm 0.0012$	$\sigma_8 \Omega_m^{0.25}$	0.6071	$0.6063 \pm 0.0069$	$r_{drag}/D_V(0.57)$	0.071864	$0.07190 \pm 0.00041$
$100\theta_{MC}$	1.041065	$1.04105 \pm 0.00041$	$\sigma_8/h^{0.5}$	0.9902	$0.989 \pm 0.011$	$H(0.57)$	93.101	$93.10 \pm 0.27$
$\tau$	0.0676	$0.067 \pm 0.013$	$\langle d^2 \rangle^{1/2}$	2.4469	$2.445 \pm 0.025$	$D_A(0.57)$	1384.0	$1383.7 \pm 7.4$
$\ln(10^{10} A_s)$	3.0649	$3.064 \pm 0.024$	$z_{re}$	8.98	$8.9^{+1.3}_{-1.1}$	$F_{AP}(0.57)$	0.67479	$0.6746 \pm 0.0018$
$n_s$	0.96887	$0.9689 \pm 0.0044$	$10^9 A_s$	2.143	$2.142 \pm 0.051$	$f\sigma_8(0.57)$	0.4731	$0.4725 \pm 0.0052$
$r$	0.0001	$< 0.0538$	$10^9 A_s e^{-2\tau}$	1.8723	$1.872 \pm 0.011$	$\sigma_8(0.57)$	0.6081	$0.6077 \pm 0.0072$
$y_{cal}$	0.99994	$1.0002 \pm 0.0025$	$D_{40}$	1222.9	$1239^{+14}_{-19}$	$r_{0.002}$	0.0001	$< 0.0496$
$A_{217}^{CIB}$	67.2	$64.2 \pm 6.6$	$D_{220}$	5711.6	$5714 \pm 40$	$r_{0.01}$	0.0001	$< 0.0517$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{810}$	2531.4	$2532 \pm 14$	$\ln(10^{10} A_t)$	-6.13	$-0.52^{+1.4}_{-0.65}$
$A_{143}^{tSZ}$	7.15	$5.1 \pm 2.0$	$D_{1420}$	814.9	$814.9 \pm 5.1$	$r_{10}$	0.0000	$< 0.0252$
$A_{100}^{PS}$	253.8	$259 \pm 28$	$D_{2000}$	230.25	$230.2 \pm 1.8$	$10^9 A_t$	0.000	$< 0.115$
$A_{143}^{PS}$	39.0	$44 \pm 8$	$n_{s,0.002}$	0.96887	$0.9689 \pm 0.0044$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.101$
$A_{143 \times 217}^{PS}$	32.4	$39^{+10}_{-10}$	$Y_P$	0.245355	$0.245346 \pm 0.000089$	$f_{2000}^{143}$	29.85	$30.2 \pm 2.8$
$A_{217}^{PS}$	97.0	$97 \pm 10$	$Y_P^{BBN}$	0.246681	$0.246672 \pm 0.000089$	$f_{2000}^{143 \times 217}$	32.41	$32.6 \pm 2.0$
$A^{kSZ}$	0.01	$< 4.76$	$10^5 D/H$	2.6076	$2.611 \pm 0.037$	$f_{2000}^{217}$	105.94	$106.1 \pm 1.9$
$A_{100}^{dustTT}$	7.49	$7.4 \pm 1.9$	Age/Gyr	13.7951	$13.796 \pm 0.028$	$\chi_{lensing}^2$	9.17	$9.7 \pm 1.3$
$A_{143}^{dustTT}$	9.08	$9.1 \pm 1.8$	$z_*$	1089.888	$1089.90 \pm 0.30$	$\chi_{lowTEB}^2$	10494.77	$10496.9 \pm 1.9$
$A_{143 \times 217}^{dustTT}$	17.68	$17.3 \pm 4.2$	$r_*$	144.910	$144.96 \pm 0.31$	$\chi_{plik}^2$	766.4	$779.3 \pm 5.5$
$A_{217}^{dustTT}$	82.0	$82.0 \pm 7.4$	$100\theta_*$	1.041258	$1.04125 \pm 0.00041$	$\chi_{H070p6}^2$	0.665	$0.68 \pm 0.26$
$c_{100}$	0.99789	$0.99787 \pm 0.00078$	$D_A/Gpc$	13.9168	$13.921 \pm 0.030$	$\chi_{JLA}^2$	706.626	$706.66 \pm 0.16$
$c_{217}$	0.99594	$0.9960 \pm 0.0014$	$z_{drag}$	1059.628	$1059.58 \pm 0.44$	$\chi_{6DF}^2$	0.0030	$0.038 \pm 0.053$
$H_0$	67.89	$67.92 \pm 0.54$	$r_{drag}$	147.610	$147.66 \pm 0.33$	$\chi_{MGS}^2$	1.54	$1.66 \pm 0.56$
$\Omega_\Lambda$	0.6934	$0.6939 \pm 0.0071$	$k_D$	0.140254	$0.14019 \pm 0.00043$	$\chi_{DR11CMass}^2$	2.413	$2.83 \pm 0.61$
$\Omega_m$	0.3066	$0.3061 \pm 0.0071$	$100\theta_D$	0.160951	$0.16098 \pm 0.00025$	$\chi_{DR11LOWZ}^2$	0.370	$0.46 \pm 0.44$
$\Omega_m h^2$	0.14134	$0.1412 \pm 0.0012$	$z_{eq}$	3362.1	$3359 \pm 28$	$\chi_{prior}^2$	2.10	$7.4 \pm 3.6$
$\Omega_m h^3$	0.095957	$0.09590 \pm 0.00045$	$k_{eq}$	0.010261	$0.010251 \pm 0.000085$	$\chi_{CMB}^2$	11270.4	$11285.9 \pm 5.7$
$\sigma_8$	0.8159	$0.8151 \pm 0.0089$	$100\theta_{eq}$	0.8204	$0.8210 \pm 0.0052$	$\chi_{BAO}^2$	4.33	$4.98 \pm 0.92$

Best-fit  $\chi_{eff}^2 = 11984.07$ ;  $\Delta\chi_{eff}^2 = 0.01$ ;  $\bar{\chi}_{eff}^2 = 12005.68$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.66$ ;  $R - 1 = 0.00663$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.00 ( $\Delta$  0.00) MGS: 1.54 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.37 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta$  -0.09) low1\_SMW\_70\_dx11d\_2014\_10\_03\_10494.77 ( $\Delta$  -0.15) plik\_dx11dr2\_HM\_v18\_TT: 766.41 ( $\Delta$  0.28) Hubble - H070p6: 0.67 ( $\Delta$  -0.00) SN - JLA December\_2013: 706.63 ( $\Delta$  -0.00)

20.18 base\_r\_plikHM\_TT\_lowTEB\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02228 \pm 0.00022$	$\Omega_m h^3$	$0.09589 \pm 0.00045$	$100\theta_D$	$0.16097 \pm 0.00026$
$\Omega_c h^2$	$0.1181 \pm 0.0019$	$\sigma_8$	$0.8160^{+0.0081}_{-0.0095}$	$z_{\text{eq}}$	$3355 \pm 42$
$100\theta_{\text{MC}}$	$1.04107 \pm 0.00045$	$\sigma_8 \Omega_m^{0.5}$	$0.4508 \pm 0.0088$	$k_{\text{eq}}$	$0.01024 \pm 0.00013$
$\tau$	$0.069^{+0.012}_{-0.018}$	$\sigma_8 \Omega_m^{0.25}$	$0.6065 \pm 0.0077$	$100\theta_{\text{eq}}$	$0.8217^{+0.0079}_{-0.0089}$
$\ln(10^{10} A_s)$	$3.067^{+0.023}_{-0.031}$	$\sigma_8/h^{0.5}$	$0.990 \pm 0.011$	$100\theta_{s,\text{eq}}$	$0.4539^{+0.0041}_{-0.0046}$
$n_s$	$0.9694^{+0.0055}_{-0.0062}$	$\langle d^2 \rangle^{1/2}$	$2.446 \pm 0.026$	$r_{\text{drag}}/D_V(0.57)$	$0.07196^{+0.00062}_{-0.00071}$
$r$	$< 0.0538$	$z_{\text{re}}$	$9.1^{+1.3}_{-1.5}$	$H(0.57)$	$93.13^{+0.36}_{-0.42}$
$y_{\text{cal}}$	$1.0002 \pm 0.0025$	$10^9 A_s$	$2.149^{+0.047}_{-0.069}$	$D_A(0.57)$	$1383^{+12}_{-11}$
$A_{217}^{\text{CIB}}$	$64.2 \pm 6.6$	$10^9 A_s e^{-2\tau}$	$1.871 \pm 0.013$	$F_{\text{AP}}(0.57)$	$0.6744 \pm 0.0029$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1239^{+15}_{-19}$	$f\sigma_8(0.57)$	$0.4728 \pm 0.0053$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 2.0$	$D_{220}$	$5713 \pm 41$	$\sigma_8(0.57)$	$0.6086^{+0.0064}_{-0.0089}$
$A_{100}^{\text{PS}}$	$259 \pm 28$	$D_{810}$	$2531 \pm 14$	$r_{0.002}$	$< 0.0498$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{1420}$	$814.9 \pm 5.2$	$r_{0.01}$	$< 0.0517$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{2000}$	$230.2 \pm 1.9$	$\ln(10^{10} A_t)$	$-0.53^{+1.4}_{-0.66}$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$n_{s,0.002}$	$0.9694^{+0.0055}_{-0.0062}$	$r_{10}$	$< 0.0252$
$A^{\text{kSZ}}$	$< 4.77$	$Y_{\text{P}}$	$0.24535 \pm 0.00010$	$10^9 A_t$	$< 0.116$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	$< 0.101$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.8$	$10^5 \text{D/H}$	$2.609 \pm 0.042$	$f_{2000}^{143}$	$30.1 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$\text{Age/Gyr}$	$13.794 \pm 0.036$	$f_{2000}^{143 \times 217}$	$32.5 \pm 2.1$
$A_{217}^{\text{dustTT}}$	$81.9 \pm 7.5$	$z_*$	$1089.88 \pm 0.39$	$f_{2000}^{217}$	$106.1 \pm 2.0$
$c_{100}$	$0.99786 \pm 0.00078$	$r_*$	$144.99 \pm 0.43$	$\chi_{\text{lensing}}^2$	$9.8 \pm 1.5$
$c_{217}$	$0.9960 \pm 0.0015$	$100\theta_*$	$1.04126 \pm 0.00044$	$\chi_{\text{lowTEB}}^2$	$10497.0 \pm 2.0$
$H_0$	$67.99^{+0.83}_{-0.93}$	$D_A/\text{Gpc}$	$13.925 \pm 0.040$	$\chi_{\text{plik}}^2$	$779.6 \pm 5.6$
$\Omega_\Lambda$	$0.695 \pm 0.011$	$z_{\text{drag}}$	$1059.58 \pm 0.46$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$\Omega_m$	$0.305 \pm 0.011$	$r_{\text{drag}}$	$147.70 \pm 0.43$	$\chi_{\text{CMB}}^2$	$11286.4 \pm 5.8$
$\Omega_m h^2$	$0.1411 \pm 0.0018$	$k_D$	$0.14016 \pm 0.00047$		

$$\bar{\chi}_{\text{eff}}^2 = 11293.84; \Delta\bar{\chi}_{\text{eff}}^2 = 1.78; R - 1 = 0.00588$$

## 20.19 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022264	$0.02226 \pm 0.00016$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.337 \pm 0.081$	$D_A/\text{Gpc}$	13.9012	$13.904 \pm 0.029$
$\Omega_c h^2$	0.11920	$0.1191 \pm 0.0014$	$A_{217}^{\text{dust}TE}$	1.657	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.628	$1059.63 \pm 0.32$
$100\theta_{\text{MC}}$	1.040853	$1.04087 \pm 0.00032$	$c_{100}$	0.99817	$0.99811 \pm 0.00077$	$r_{\text{drag}}$	147.421	$147.45 \pm 0.30$
$\tau$	0.0629	$0.063 \pm 0.014$	$c_{217}$	0.99608	$0.9961 \pm 0.0014$	$k_D$	0.140440	$0.14041 \pm 0.00032$
$\ln(10^{10} A_s)$	3.0582	$3.059 \pm 0.025$	$H_0$	67.52	$67.57 \pm 0.65$	$100\theta_D$	0.160918	$0.16093 \pm 0.00018$
$n_s$	0.96565	$0.9663 \pm 0.0048$	$\Omega_\Lambda$	0.6883	$0.6888 \pm 0.0088$	$z_{\text{eq}}$	3380.6	$3378 \pm 32$
$r$	0.0003	$< 0.0549$	$\Omega_m$	0.3117	$0.3112 \pm 0.0088$	$k_{\text{eq}}$	0.010318	$0.010311 \pm 0.000097$
$y_{\text{cal}}$	1.00001	$1.0002 \pm 0.0025$	$\Omega_m h^2$	0.14211	$0.1420 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8168	$0.8173 \pm 0.0061$
$A_{217}^{\text{CIB}}$	68.1	$64.6 \pm 6.6$	$\Omega_m h^3$	0.095958	$0.09595 \pm 0.00030$	$100\theta_{s,\text{eq}}$	0.45130	$0.4516 \pm 0.0031$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8148	$0.8149 \pm 0.0088$	$r_{\text{drag}}/D_V(0.57)$	0.071566	$0.07160 \pm 0.00049$
$A_{143}^{\text{tSZ}}$	7.31	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4549	$0.4545 \pm 0.0070$	$H(0.57)$	92.951	$92.97 \pm 0.28$
$A_{100}^{\text{PS}}$	258.6	$261 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6088	$0.6086 \pm 0.0069$	$D_A(0.57)$	1388.9	$1388.3 \pm 8.7$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9915	$0.991 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67608	$0.6759 \pm 0.0022$
$A_{143 \times 217}^{\text{PS}}$	32.7	$39_{-10}^{+10}$	$\langle d^2 \rangle^{1/2}$	2.4538	$2.453 \pm 0.025$	$f\sigma_8(0.57)$	0.4738	$0.4737 \pm 0.0050$
$A_{217}^{\text{PS}}$	96.3	$96 \pm 10$	$z_{\text{re}}$	8.55	$8.5_{-1.2}^{+1.4}$	$\sigma_8(0.57)$	0.6061	$0.6063 \pm 0.0074$
$A^{\text{kSZ}}$	0.00	$< 4.53$	$10^9 A_s$	2.129	$2.131 \pm 0.054$	$r_{0.002}$	0.0002	$< 0.0503$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8773	$1.877 \pm 0.012$	$r_{0.01}$	0.0002	$< 0.0526$
$A_{143}^{\text{dust}TT}$	9.03	$9.1 \pm 1.8$	$D_{40}$	1230.1	$1245_{-19}^{+14}$	$\ln(10^{10} A_t)$	-5.19	$-0.50_{-0.64}^{+1.4}$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$17.2 \pm 4.1$	$D_{220}$	5723.0	$5722 \pm 39$	$r_{10}$	0.0001	$< 0.0256$
$A_{217}^{\text{dust}TT}$	81.7	$81.7 \pm 7.4$	$D_{810}$	2533.4	$2534 \pm 14$	$10^9 A_t$	0.001	$< 0.117$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0808 \pm 0.0057$	$D_{1420}$	814.54	$814.9 \pm 4.8$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.103$
$A_{100 \times 143}^{\text{dust}EE}$	0.04904	$0.0485 \pm 0.0050$	$D_{2000}$	229.99	$230.1 \pm 1.6$	$f_{2000}^{143}$	30.01	$30.0 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.099 \pm 0.033$	$n_{s,0.002}$	0.96565	$0.9663 \pm 0.0048$	$f_{2000}^{143 \times 217}$	32.68	$32.6 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1004	$0.0997 \pm 0.0069$	$Y_P$	0.245346	$0.245345 \pm 0.000073$	$f_{2000}^{217}$	106.17	$106.1 \pm 1.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2246	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246673	$0.246671 \pm 0.000073$	$\chi_{\text{lensing}}^2$	9.72	$10.3 \pm 1.8$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$10^5 D/H$	2.6113	$2.611 \pm 0.030$	$\chi_{\text{lowTEB}}^2$	10495.31	$10497.5 \pm 2.0$
$A_{100}^{\text{dust}TE}$	0.1405	$0.142 \pm 0.038$	$\text{Age}/\text{Gyr}$	13.8069	$13.806 \pm 0.026$	$\chi_{\text{plik}}^2$	2435.0	$2453.6 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.132 \pm 0.029$	$z_*$	1089.985	$1089.98 \pm 0.30$	$\chi_{\text{prior}}^2$	7.1	$19.3 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	0.301	$0.303 \pm 0.085$	$r_*$	144.718	$144.74 \pm 0.31$	$\chi_{\text{CMB}}^2$	12940.1	$12961.4 \pm 6.9$
$A_{143}^{\text{dust}TE}$	0.155	$0.156 \pm 0.055$	$100\theta_*$	1.041044	$1.04106 \pm 0.00032$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.18$ ;  $\Delta\chi_{\text{eff}}^2 = 0.00$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.75$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.63$ ;  $R - 1 = 0.01158$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.72 ( $\Delta$  -0.06) lowl.SMW.70\_dx11d.2014.10.03\_v5c\_Ap: 10495.32 ( $\Delta$  0.03) plik\_dx11dr2\_HM\_v18.TTTEEE: 2435.04 ( $\Delta$  0.13)



20.20 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022286	$0.02228 \pm 0.00014$	$c_{100}$	0.99818	$0.99812 \pm 0.00077$	$100\theta_D$	0.160909	$0.16091 \pm 0.00018$
$\Omega_c h^2$	0.11895	$0.1189 \pm 0.0010$	$c_{217}$	0.99605	$0.9960 \pm 0.0014$	$z_{eq}$	3375.0	$3373 \pm 23$
$100\theta_{MC}$	1.040916	$1.04090 \pm 0.00030$	$H_0$	67.654	$67.68 \pm 0.47$	$k_{eq}$	0.010301	$0.010294 \pm 0.000072$
$\tau$	0.0669	$0.065 \pm 0.012$	$\Omega_\Lambda$	0.6900	$0.6904 \pm 0.0063$	$100\theta_{eq}$	0.81795	$0.8183 \pm 0.0045$
$\ln(10^{10} A_s)$	3.0657	$3.062 \pm 0.023$	$\Omega_m$	0.3100	$0.3096 \pm 0.0063$	$100\theta_{s,eq}$	0.45187	$0.4521 \pm 0.0023$
$n_s$	0.96655	$0.9669 \pm 0.0041$	$\Omega_m h^2$	0.14188	$0.14178 \pm 0.00098$	$r_{drag}/D_V(0.57)$	0.071663	$0.07169 \pm 0.00035$
$r$	0.0000	$< 0.0553$	$\Omega_m h^3$	0.095987	$0.09595 \pm 0.00030$	$H(0.57)$	93.011	$93.01 \pm 0.22$
$y_{cal}$	0.99995	$1.0003 \pm 0.0025$	$\sigma_8$	0.8172	$0.8153 \pm 0.0087$	$D_A(0.57)$	1387.1	$1386.9 \pm 6.4$
$A_{217}^{CIB}$	67.6	$64.5 \pm 6.6$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.4536 \pm 0.0060$	$F_{AP}(0.57)$	0.67564	$0.6756 \pm 0.0016$
$\xi^{tSZ \times CIB}$	0.00	—	$\sigma_8 \Omega_m^{0.25}$	0.6098	$0.6081 \pm 0.0067$	$f\sigma_8(0.57)$	0.4747	$0.4735 \pm 0.0050$
$A_{143}^{tSZ}$	7.30	$5.3 \pm 1.9$	$\sigma_8/h^{0.5}$	0.9935	$0.991 \pm 0.010$	$\sigma_8(0.57)$	0.6083	$0.6070 \pm 0.0069$
$A_{100}^{PS}$	258.0	$261 \pm 27$	$\langle d^2 \rangle^{1/2}$	2.4583	$2.452 \pm 0.025$	$r_{0.002}$	0.0000	$< 0.0508$
$A_{143}^{PS}$	38.5	$43 \pm 8$	$z_{re}$	8.93	$8.7 \pm 1.2$	$r_{0.01}$	0.0000	$< 0.0530$
$A_{143 \times 217}^{PS}$	32.5	$39 \pm 10$	$10^9 A_s$	2.1449	$2.137 \pm 0.049$	$\ln(10^{10} A_t)$	-6.98	$-0.49^{+1.4}_{-0.64}$
$A_{217}^{PS}$	96.7	$96 \pm 10$	$10^9 A_s e^{-2\tau}$	1.8762	$1.876 \pm 0.011$	$r_{10}$	0.0000	$< 0.0259$
$A^{kSZ}$	0.00	$< 4.43$	$D_{40}$	1229.4	$1244^{+13}_{-19}$	$10^9 A_t$	0.000	$< 0.118$
$A_{100}^{dustTT}$	7.52	$7.5 \pm 1.9$	$D_{220}$	5722.7	$5724 \pm 38$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.104$
$A_{143}^{dustTT}$	9.02	$9.1 \pm 1.8$	$D_{810}$	2533.0	$2534 \pm 13$	$f_{2000}^{143}$	29.75	$29.9 \pm 2.7$
$A_{143 \times 217}^{dustTT}$	17.57	$17.2 \pm 4.2$	$D_{1420}$	814.71	$815.1 \pm 4.8$	$f_{2000}^{143 \times 217}$	32.46	$32.5 \pm 1.8$
$A_{217}^{dustTT}$	81.8	$81.7 \pm 7.4$	$D_{2000}$	230.16	$230.2 \pm 1.6$	$f_{2000}^{217}$	106.05	$106.0 \pm 1.8$
$A_{100}^{dustEE}$	0.0814	$0.0809 \pm 0.0057$	$n_{s,0.002}$	0.96655	$0.9669 \pm 0.0041$	$\chi^2_{lensing}$	9.99	$10.2 \pm 1.7$
$A_{100 \times 143}^{dustEE}$	0.04907	$0.0485 \pm 0.0050$	$Y_P$	0.245356	$0.245353 \pm 0.000064$	$\chi^2_{lowTEB}$	10495.32	$10497.3 \pm 1.9$
$A_{100 \times 217}^{dustEE}$	0.0987	$0.0998 \pm 0.033$	$Y_P^{BBN}$	0.246682	$0.246679 \pm 0.000064$	$\chi^2_{plik}$	2434.8	$2453.4 \pm 6.7$
$A_{143}^{dustEE}$	0.1005	$0.0998 \pm 0.0069$	$10^5 D/H$	2.6072	$2.608 \pm 0.027$	$\chi^2_{6DF}$	0.0216	$0.046 \pm 0.060$
$A_{143 \times 217}^{dustEE}$	0.2233	$0.223 \pm 0.047$	Age/Gyr	13.8015	$13.802 \pm 0.021$	$\chi^2_{MGS}$	1.279	$1.37 \pm 0.45$
$A_{217}^{dustEE}$	0.653	$0.65 \pm 0.13$	$z_*$	1089.933	$1089.93 \pm 0.24$	$\chi^2_{DR11CMass}$	2.449	$2.74 \pm 0.48$
$A_{100}^{dustTE}$	0.1413	$0.142 \pm 0.038$	$r_*$	144.768	$144.80 \pm 0.24$	$\chi^2_{DR11LOWZ}$	0.607	$0.67 \pm 0.48$
$A_{100 \times 143}^{dustTE}$	0.1323	$0.132 \pm 0.029$	$100\theta_*$	1.041115	$1.04109 \pm 0.00030$	$\chi^2_{prior}$	7.1	$19.4 \pm 5.5$
$A_{100 \times 217}^{dustTE}$	0.302	$0.302 \pm 0.085$	$D_A/Gpc$	13.9051	$13.908 \pm 0.023$	$\chi^2_{CMB}$	12940.1	$12961.0 \pm 6.8$
$A_{143}^{dustTE}$	0.154	$0.156 \pm 0.054$	$z_{drag}$	1059.666	$1059.65 \pm 0.30$	$\chi^2_{BAO}$	4.358	$4.83 \pm 0.70$
$A_{143 \times 217}^{dustTE}$	0.336	$0.337 \pm 0.081$	$r_{drag}$	147.464	$147.49 \pm 0.25$			
$A_{217}^{dustTE}$	1.654	$1.66 \pm 0.26$	$k_D$	0.140409	$0.14038 \pm 0.00029$			

Best-fit  $\chi^2_{\text{eff}} = 12951.61$ ;  $\Delta\chi^2_{\text{eff}} = 0.03$ ;  $\bar{\chi}^2_{\text{eff}} = 12985.21$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.56$ ;  $R - 1 = 0.01694$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 ( $\Delta$  0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMASS: 2.45 ( $\Delta$  -0.00) DR11LOWZ: 0.61 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.98 ( $\Delta$  0.31) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.32 ( $\Delta$  0.12) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.81 ( $\Delta$  -0.49)





20.21 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022311	$0.02230 \pm 0.00014$	$c_{100}$	0.99816	$0.99812 \pm 0.00078$	$100\theta_D$	0.160878	$0.16090 \pm 0.00018$
$\Omega_c h^2$	0.11880	$0.1187 \pm 0.0010$	$c_{217}$	0.99603	$0.9960 \pm 0.0014$	$z_{eq}$	3372.1	$3369 \pm 23$
$100\theta_{MC}$	1.040909	$1.04092 \pm 0.00030$	$H_0$	67.724	$67.77 \pm 0.46$	$k_{eq}$	0.010292	$0.010281 \pm 0.000070$
$\tau$	0.0665	$0.066 \pm 0.012$	$\Omega_\Lambda$	0.6909	$0.6916 \pm 0.0061$	$100\theta_{eq}$	0.81854	$0.8192 \pm 0.0043$
$\ln(10^{10} A_s)$	3.0649	$3.064 \pm 0.023$	$\Omega_m$	0.3091	$0.3084 \pm 0.0061$	$100\theta_{s,eq}$	0.45216	$0.4525 \pm 0.0022$
$n_s$	0.96694	$0.9674 \pm 0.0040$	$\Omega_m h^2$	0.14176	$0.14161 \pm 0.00096$	$r_{drag}/D_V(0.57)$	0.071710	$0.07175 \pm 0.00034$
$r$	0.0001	$< 0.0558$	$\Omega_m h^3$	0.096003	$0.09596 \pm 0.00030$	$H(0.57)$	93.043	$93.05 \pm 0.21$
$y_{cal}$	1.00010	$1.0003 \pm 0.0025$	$\sigma_8$	0.8164	$0.8156 \pm 0.0087$	$D_A(0.57)$	1386.1	$1385.6 \pm 6.2$
$A_{217}^{CIB}$	67.3	$64.5 \pm 6.6$	$\sigma_8 \Omega_m^{0.5}$	0.4539	$0.4529 \pm 0.0060$	$F_{AP}(0.57)$	0.67541	$0.6752 \pm 0.0016$
$\xi^{tSZ \times CIB}$	0.06	—	$\sigma_8 \Omega_m^{0.25}$	0.6087	$0.6078 \pm 0.0066$	$f\sigma_8(0.57)$	0.4740	$0.4734 \pm 0.0050$
$A_{143}^{tSZ}$	7.30	$5.4 \pm 1.9$	$\sigma_8/h^{0.5}$	0.9920	$0.991 \pm 0.010$	$\sigma_8(0.57)$	0.6079	$0.6075 \pm 0.0069$
$A_{100}^{PS}$	256.2	$261 \pm 27$	$\langle d^2 \rangle^{1/2}$	2.4550	$2.451 \pm 0.025$	$r_{0.002}$	0.0001	$< 0.0514$
$A_{143}^{PS}$	39.0	$43 \pm 8$	$z_{re}$	8.88	$8.8 \pm 1.2$	$r_{0.01}$	0.0001	$< 0.0535$
$A_{143 \times 217}^{PS}$	34.2	$39 \pm 10$	$10^9 A_s$	2.1432	$2.141 \pm 0.049$	$\ln(10^{10} A_t)$	-6.26	$-0.48^{+1.4}_{-0.63}$
$A_{217}^{PS}$	97.2	$96 \pm 10$	$10^9 A_s e^{-2\tau}$	1.8762	$1.876 \pm 0.011$	$r_{10}$	0.0000	$< 0.0260$
$A^{kSZ}$	0.00	$< 4.37$	$D_{40}$	1229.0	$1244^{+13}_{-19}$	$10^9 A_t$	0.000	$< 0.119$
$A_{100}^{dustTT}$	7.43	$7.5 \pm 1.9$	$D_{220}$	5726.6	$5725 \pm 38$	$10^9 A_t e^{-2\tau}$	0.000	$< 0.105$
$A_{143}^{dustTT}$	9.13	$9.1 \pm 1.8$	$D_{810}$	2534.0	$2534 \pm 13$	$f_{2000}^{143}$	29.47	$29.8 \pm 2.6$
$A_{143 \times 217}^{dustTT}$	17.66	$17.2 \pm 4.2$	$D_{1420}$	815.23	$815.3 \pm 4.8$	$f_{2000}^{143 \times 217}$	32.32	$32.4 \pm 1.8$
$A_{217}^{dustTT}$	81.8	$81.8 \pm 7.4$	$D_{2000}$	230.34	$230.3 \pm 1.6$	$f_{2000}^{217}$	105.86	$105.9 \pm 1.8$
$A_{100}^{dustEE}$	0.0813	$0.0810 \pm 0.0057$	$n_{s,0.002}$	0.96694	$0.9674 \pm 0.0040$	$\chi^2_{lensing}$	9.81	$10.2 \pm 1.7$
$A_{100 \times 143}^{dustEE}$	0.04908	$0.0486 \pm 0.0050$	$Y_P$	0.245367	$0.245361 \pm 0.000064$	$\chi^2_{lowTEB}$	10495.22	$10497.3 \pm 1.9$
$A_{100 \times 217}^{dustEE}$	0.0999	$0.0999 \pm 0.033$	$Y_P^{BBN}$	0.246693	$0.246687 \pm 0.000064$	$\chi^2_{plik}$	2435.2	$2453.6 \pm 6.7$
$A_{143}^{dustEE}$	0.1006	$0.0999 \pm 0.0069$	$10^5 D/H$	2.6025	$2.605 \pm 0.027$	$\chi^2_{H070p6}$	0.749	$0.74 \pm 0.23$
$A_{143 \times 217}^{dustEE}$	0.2251	$0.224 \pm 0.047$	Age/Gyr	13.7987	$13.799 \pm 0.021$	$\chi^2_{JLA}$	706.683	$706.70 \pm 0.16$
$A_{217}^{dustEE}$	0.650	$0.65 \pm 0.13$	$z_*$	1089.889	$1089.89 \pm 0.23$	$\chi^2_{6DF}$	0.0155	$0.037 \pm 0.050$
$A_{100}^{dustTE}$	0.1402	$0.142 \pm 0.038$	$r_*$	144.787	$144.83 \pm 0.24$	$\chi^2_{MGS}$	1.343	$1.46 \pm 0.45$
$A_{100 \times 143}^{dustTE}$	0.1313	$0.132 \pm 0.029$	$100\theta_*$	1.041104	$1.04111 \pm 0.00030$	$\chi^2_{DR11CMass}$	2.426	$2.70 \pm 0.42$
$A_{100 \times 217}^{dustTE}$	0.306	$0.302 \pm 0.085$	$D_A/Gpc$	13.9071	$13.911 \pm 0.023$	$\chi^2_{DR11LOWZ}$	0.545	$0.58 \pm 0.44$
$A_{143}^{dustTE}$	0.154	$0.156 \pm 0.054$	$z_{drag}$	1059.704	$1059.67 \pm 0.30$	$\chi^2_{prior}$	7.1	$19.4 \pm 5.5$
$A_{143 \times 217}^{dustTE}$	0.337	$0.337 \pm 0.081$	$r_{drag}$	147.476	$147.53 \pm 0.24$	$\chi^2_{CMB}$	12940.2	$12961.0 \pm 6.8$
$A_{217}^{dustTE}$	1.667	$1.66 \pm 0.26$	$k_D$	0.140416	$0.14036 \pm 0.00029$	$\chi^2_{BAO}$	4.329	$4.78 \pm 0.62$

Best-fit  $\chi^2_{\text{eff}} = 13659.05$ ;  $\Delta\chi^2_{\text{eff}} = 0.00$ ;  $\bar{\chi}^2_{\text{eff}} = 13692.64$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.53$ ;  $R - 1 = 0.01680$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.34 ( $\Delta$  -0.06) DR11CMASS: 2.43 ( $\Delta$  0.02) DR11LOWZ: 0.55 ( $\Delta$  0.06) CMB - smica\_g30\_ftl\_full\_pp: 9.81 ( $\Delta$  0.06) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_10495.22 ( $\Delta$  0.00) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.20 ( $\Delta$  0.00) Hubble - H070p6: 0.75 ( $\Delta$  0.03) SN - JLA December\_2013: 706.68 ( $\Delta$  0.02)

## 20.22 base\_r\_plikHM\_TTTEEE\_lowTEB\_lensing\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02227 \pm 0.00016$	$A_{143 \times 217}^{\text{dust}TE}$	$0.338 \pm 0.081$	$D_A/\text{Gpc}$	$13.905 \pm 0.028$
$\Omega_c h^2$	$0.1190 \pm 0.0014$	$A_{217}^{\text{dust}TE}$	$1.66 \pm 0.25$	$z_{\text{drag}}$	$1059.64 \pm 0.31$
$100\theta_{\text{MC}}$	$1.04088 \pm 0.00032$	$c_{100}$	$0.99811 \pm 0.00078$	$r_{\text{drag}}$	$147.47 \pm 0.29$
$\tau$	$0.065^{+0.011}_{-0.015}$	$c_{217}$	$0.9960 \pm 0.0014$	$k_D$	$0.14040 \pm 0.00031$
$\ln(10^{10} A_s)$	$3.062^{+0.020}_{-0.026}$	$H_0$	$67.62 \pm 0.62$	$100\theta_D$	$0.16092 \pm 0.00018$
$n_s$	$0.9666 \pm 0.0046$	$\Omega_\Lambda$	$0.6895 \pm 0.0084$	$z_{\text{eq}}$	$3376 \pm 31$
$r$	$< 0.0550$	$\Omega_m$	$0.3105 \pm 0.0084$	$k_{\text{eq}}$	$0.010303 \pm 0.000093$
$y_{\text{cal}}$	$1.0002 \pm 0.0025$	$\Omega_m h^2$	$0.1419 \pm 0.0013$	$100\theta_{\text{eq}}$	$0.8178 \pm 0.0059$
$A_{217}^{\text{CIB}}$	$64.6 \pm 6.6$	$\Omega_m h^3$	$0.09595 \pm 0.00030$	$100\theta_{s,\text{eq}}$	$0.4518 \pm 0.0030$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\sigma_8$	$0.8160^{+0.0075}_{-0.0091}$	$r_{\text{drag}}/D_V(0.57)$	$0.07164 \pm 0.00046$
$A_{143}^{\text{tSZ}}$	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	$0.4546 \pm 0.0070$	$H(0.57)$	$92.99 \pm 0.27$
$A_{100}^{\text{PS}}$	$261 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	$0.6090 \pm 0.0067$	$D_A(0.57)$	$1387.6 \pm 8.3$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8/h^{0.5}$	$0.992 \pm 0.010$	$F_{\text{AP}}(0.57)$	$0.6758 \pm 0.0021$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	$2.455 \pm 0.024$	$f\sigma_8(0.57)$	$0.4741 \pm 0.0048$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$z_{\text{re}}$	$8.7^{+1.1}_{-1.3}$	$\sigma_8(0.57)$	$0.6073^{+0.0059}_{-0.0078}$
$A^{\text{kSZ}}$	$< 4.44$	$10^9 A_s$	$2.138^{+0.042}_{-0.058}$	$r_{0.002}$	$< 0.0505$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.011$	$r_{0.01}$	$< 0.0527$
$A_{143}^{\text{dust}TT}$	$9.1 \pm 1.8$	$D_{40}$	$1245^{+14}_{-19}$	$\ln(10^{10} A_t)$	$-0.50^{+1.4}_{-0.65}$
$A_{143 \times 217}^{\text{dust}TT}$	$17.2 \pm 4.2$	$D_{220}$	$5722 \pm 39$	$r_{10}$	$< 0.0257$
$A_{217}^{\text{dust}TT}$	$81.7 \pm 7.4$	$D_{810}$	$2534 \pm 13$	$10^9 A_t$	$< 0.118$
$A_{100}^{\text{dust}EE}$	$0.0809 \pm 0.0057$	$D_{1420}$	$814.9 \pm 4.8$	$10^9 A_t e^{-2\tau}$	$< 0.103$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0484 \pm 0.0050$	$D_{2000}$	$230.2 \pm 1.6$	$f_{2000}^{143}$	$29.9 \pm 2.7$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0996 \pm 0.033$	$n_{s,0.002}$	$0.9666 \pm 0.0046$	$f_{2000}^{143 \times 217}$	$32.5 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.0998 \pm 0.0069$	$Y_P$	$0.245349 \pm 0.000071$	$f_{2000}^{217}$	$106.0 \pm 1.8$
$A_{143 \times 217}^{\text{dust}EE}$	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	$0.246675 \pm 0.000071$	$\chi_{\text{lensing}}^2$	$10.4 \pm 1.8$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$10^5 \text{D/H}$	$2.610 \pm 0.030$	$\chi_{\text{lowTEB}}^2$	$10497.4 \pm 1.9$
$A_{100}^{\text{dust}TE}$	$0.142 \pm 0.038$	$\text{Age/Gyr}$	$13.804 \pm 0.025$	$\chi_{\text{plik}}^2$	$2453.5 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$z_*$	$1089.95 \pm 0.29$	$\chi_{\text{prior}}^2$	$19.4 \pm 5.5$
$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.085$	$r_*$	$144.77 \pm 0.30$	$\chi_{\text{CMB}}^2$	$12961.2 \pm 6.8$
$A_{143}^{\text{dust}TE}$	$0.156 \pm 0.054$	$100\theta_*$	$1.04108 \pm 0.00031$		

$$\bar{\chi}_{\text{eff}}^2 = 12980.61; \Delta\bar{\chi}_{\text{eff}}^2 = 1.68; R - 1 = 0.01566$$

## 20.23 base\_r\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022213	$0.02220 \pm 0.00022$	$\Omega_m h^3$	0.096018	$0.09596 \pm 0.00046$	$100\theta_D$	0.160957	$0.16099 \pm 0.00026$
$\Omega_c h^2$	0.12016	$0.1198 \pm 0.0021$	$\sigma_8$	0.8273	$0.826 \pm 0.011$	$z_{\text{eq}}$	3402.3	$3395 \pm 48$
$100\theta_{\text{MC}}$	1.040830	$1.04086 \pm 0.00047$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.464 \pm 0.013$	$k_{\text{eq}}$	0.010384	$0.01036 \pm 0.00015$
$\tau$	0.0732	$0.073^{+0.011}_{-0.013}$	$\sigma_8 \Omega_m^{0.25}$	0.6210	$0.619 \pm 0.012$	$100\theta_{\text{eq}}$	0.8128	$0.8143 \pm 0.0089$
$\ln(10^{10} A_s)$	3.0813	$3.080^{+0.022}_{-0.024}$	$\sigma_8/h^{0.5}$	1.0097	$1.007 \pm 0.017$	$100\theta_{s,\text{eq}}$	0.44922	$0.4500 \pm 0.0046$
$n_s$	0.9647	$0.9655 \pm 0.0058$	$\langle d^2 \rangle^{1/2}$	2.4944	$2.488 \pm 0.040$	$r_{\text{drag}}/D_V(0.57)$	0.07126	$0.07138 \pm 0.00070$
$r$	0.0000	$< 0.0417$	$z_{\text{re}}$	9.56	$9.5 \pm 1.1$	$H(0.57)$	92.811	$92.85 \pm 0.39$
$y_{\text{cal}}$	1.00022	$1.0004 \pm 0.0025$	$10^9 A_s$	2.179	$2.177^{+0.046}_{-0.054}$	$D_A(0.57)$	1393.9	$1392 \pm 12$
$A_{217}^{\text{CIB}}$	66.9	$63.9 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8821	$1.881 \pm 0.013$	$F_{\text{AP}}(0.57)$	0.67750	$0.6771 \pm 0.0033$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{40}$	1236.4	$1247 \pm 17$	$f\sigma_8(0.57)$	0.4825	$0.4813 \pm 0.0081$
$A_{143}^{\text{tSZ}}$	7.06	$5.2 \pm 1.9$	$D_{220}$	5715.2	$5713 \pm 41$	$\sigma_8(0.57)$	0.6141	$0.6135^{+0.0068}_{-0.0076}$
$A_{100}^{\text{PS}}$	254.6	$258 \pm 28$	$D_{810}$	2534.8	$2534 \pm 14$	$r_{0.002}$	0.0000	$< 0.0379$
$A_{143}^{\text{PS}}$	39.8	$44 \pm 8$	$D_{1420}$	814.6	$814.6 \pm 5.1$	$r_{0.01}$	0.0000	$< 0.0398$
$A_{143 \times 217}^{\text{PS}}$	33.7	$39^{+10}_{-10}$	$D_{2000}$	230.28	$230.2 \pm 1.8$	$\ln(10^{10} A_t)$	-7.21	$-0.78^{+1.5}_{-0.68}$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$n_{s,0.002}$	0.9647	$0.9655 \pm 0.0058$	$r_{10}$	0.0000	$< 0.0192$
$A^{\text{kSZ}}$	0.00	$< 4.52$	$Y_{\text{P}}$	0.245323	$0.24532 \pm 0.00010$	$10^9 A_t$	0.0001	$< 0.0907$
$A_{100}^{\text{dustTT}}$	7.31	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246650	$0.24664 \pm 0.00010$	$10^9 A_t e^{-2\tau}$	0.0001	$< 0.0785$
$A_{143}^{\text{dustTT}}$	8.96	$9.0 \pm 1.8$	$10^5 \text{D/H}$	2.6210	$2.624 \pm 0.042$	$f_{2000}^{143}$	29.78	$30.0 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.54	$17.2 \pm 4.1$	$\text{Age/Gyr}$	13.8168	$13.815 \pm 0.037$	$f_{2000}^{143 \times 217}$	32.41	$32.5 \pm 2.0$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.3$	$z_*$	1090.131	$1090.12 \pm 0.40$	$f_{2000}^{217}$	105.98	$106.1 \pm 1.9$
$c_{100}$	0.99793	$0.99787 \pm 0.00079$	$r_*$	144.510	$144.60 \pm 0.48$	$\chi_{\text{WMAPTEB}}^2$	19734.37	$19736.8 \pm 2.7$
$c_{217}$	0.99596	$0.9960 \pm 0.0014$	$100\theta_*$	1.041025	$1.04106 \pm 0.00046$	$\chi_{\text{plik}}^2$	763.8	$777.6 \pm 5.5$
$H_0$	67.14	$67.26 \pm 0.92$	$D_A/\text{Gpc}$	13.8815	$13.890 \pm 0.044$	$\chi_{\text{prior}}^2$	1.94	$7.3 \pm 3.6$
$\Omega_\Lambda$	0.6827	$0.684^{+0.014}_{-0.013}$	$z_{\text{drag}}$	1059.589	$1059.53 \pm 0.46$	$\chi_{\text{CMB}}^2$	20498.2	$20514.4 \pm 5.8$
$\Omega_m$	0.3173	$0.316^{+0.013}_{-0.014}$	$r_{\text{drag}}$	147.223	$147.32 \pm 0.48$			
$\Omega_m h^2$	0.14302	$0.1427 \pm 0.0020$	$k_D$	0.14061	$0.14049 \pm 0.00052$			

Best-fit  $\chi_{\text{eff}}^2 = 20500.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.78$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.64$ ;  $R - 1 = 0.01261$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19734.37 ( $\Delta$  0.22) plik\_dx11dr2\_HM\_v18\_TT: 763.84 ( $\Delta$  -0.24)

## 20.24 base\_r\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02226 \pm 0.00021$	$\Omega_m h^3$	$0.09589 \pm 0.00045$	$100\theta_D$	$0.16099 \pm 0.00026$
$\Omega_c h^2$	$0.1182 \pm 0.0016$	$\sigma_8$	$0.8168 \pm 0.0072$	$z_{\text{eq}}$	$3357 \pm 37$
$100\theta_{\text{MC}}$	$1.04107 \pm 0.00044$	$\sigma_8 \Omega_m^{0.5}$	$0.4517 \pm 0.0084$	$k_{\text{eq}}$	$0.01025 \pm 0.00011$
$\tau$	$0.0694^{+0.0098}_{-0.012}$	$\sigma_8 \Omega_m^{0.25}$	$0.6074 \pm 0.0074$	$100\theta_{\text{eq}}$	$0.8213 \pm 0.0070$
$\ln(10^{10} A_s)$	$3.068^{+0.019}_{-0.021}$	$\sigma_8/h^{0.5}$	$0.991 \pm 0.010$	$100\theta_{s,\text{eq}}$	$0.4536 \pm 0.0036$
$n_s$	$0.9692 \pm 0.0050$	$\langle d^2 \rangle^{1/2}$	$2.449 \pm 0.024$	$r_{\text{drag}}/D_V(0.57)$	$0.07192 \pm 0.00055$
$r$	$< 0.0475$	$z_{\text{re}}$	$9.12 \pm 0.95$	$H(0.57)$	$93.11 \pm 0.34$
$y_{\text{cal}}$	$1.0002 \pm 0.0024$	$10^9 A_s$	$2.151^{+0.040}_{-0.046}$	$D_A(0.57)$	$1383.4 \pm 9.8$
$A_{217}^{\text{CIB}}$	$64.2 \pm 6.7$	$10^9 A_s e^{-2\tau}$	$1.872 \pm 0.011$	$F_{\text{AP}}(0.57)$	$0.6746 \pm 0.0025$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{40}$	$1237^{+15}_{-18}$	$f\sigma_8(0.57)$	$0.4734 \pm 0.0050$
$A_{143}^{\text{tSZ}}$	$5.1 \pm 1.9$	$D_{220}$	$5712 \pm 40$	$\sigma_8(0.57)$	$0.6090 \pm 0.0057$
$A_{100}^{\text{PS}}$	$258 \pm 28$	$D_{810}$	$2532 \pm 13$	$r_{0.002}$	$< 0.0440$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{1420}$	$814.9^{+5.5}_{-4.8}$	$r_{0.01}$	$< 0.0456$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{2000}$	$230.2 \pm 1.8$	$\ln(10^{10} A_t)$	$-0.65^{+1.4}_{-0.66}$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$n_{s,0.002}$	$0.9692 \pm 0.0050$	$r_{10}$	$< 0.0222$
$A^{\text{kSZ}}$	$< 4.68$	$Y_{\text{P}}$	$0.245344 \pm 0.000095$	$10^9 A_t$	$< 0.102$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	$0.246670 \pm 0.000096$	$10^9 A_t e^{-2\tau}$	$< 0.0888$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.9$	$10^5 \text{D/H}$	$2.612 \pm 0.040$	$f_{2000}^{143}$	$30.1 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3 \pm 4.2$	$\text{Age/Gyr}$	$13.796 \pm 0.033$	$f_{2000}^{143 \times 217}$	$32.5 \pm 2.0$
$A_{217}^{\text{dustTT}}$	$81.9 \pm 7.5$	$z_*$	$1089.90 \pm 0.35$	$f_{2000}^{217}$	$106.1 \pm 1.9$
$c_{100}$	$0.99785 \pm 0.00080$	$r_*$	$144.97 \pm 0.38$	$\chi_{\text{lensing}}^2$	$9.9 \pm 1.5$
$c_{217}$	$0.9960 \pm 0.0014$	$100\theta_*$	$1.04127 \pm 0.00043$	$\chi_{\text{WMAPTEB}}^2$	$19735.5 \pm 2.2$
$H_0$	$67.95 \pm 0.73$	$D_A/\text{Gpc}$	$13.923 \pm 0.036$	$\chi_{\text{plik}}^2$	$779.4 \pm 7.8$
$\Omega_\Lambda$	$0.6941 \pm 0.0097$	$z_{\text{drag}}$	$1059.56 \pm 0.45$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$\Omega_m$	$0.3059 \pm 0.0097$	$r_{\text{drag}}$	$147.68 \pm 0.39$	$\chi_{\text{CMB}}^2$	$20524.8 \pm 8.0$
$\Omega_m h^2$	$0.1411 \pm 0.0015$	$k_D$	$0.14016 \pm 0.00045$		

$$\bar{\chi}_{\text{eff}}^2 = 20532.21; \Delta\bar{\chi}_{\text{eff}}^2 = 1.46; R - 1 = 0.03993$$

## 20.25 base\_r\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02225 \pm 0.00020$	$\sigma_8$	$0.824 \pm 0.010$	$k_{\text{eq}}$	$0.010305 \pm 0.000090$
$\Omega_c h^2$	$0.1190 \pm 0.0013$	$\sigma_8 \Omega_m^{0.5}$	$0.4594 \pm 0.0089$	$100\theta_{\text{eq}}$	$0.8177 \pm 0.0055$
$100\theta_{\text{MC}}$	$1.04097 \pm 0.00042$	$\sigma_8 \Omega_m^{0.25}$	$0.6153 \pm 0.0093$	$100\theta_{\text{s,eq}}$	$0.4518 \pm 0.0028$
$\tau$	$0.074^{+0.011}_{-0.012}$	$\sigma_8/h^{0.5}$	$1.003 \pm 0.014$	$r_{\text{drag}}/D_V(0.57)$	$0.07165 \pm 0.00042$
$\ln(10^{10} A_s)$	$3.081 \pm 0.023$	$\langle d^2 \rangle^{1/2}$	$2.477 \pm 0.033$	$H(0.57)$	$92.99 \pm 0.27$
$n_s$	$0.9674 \pm 0.0044$	$z_{\text{re}}$	$9.6 \pm 1.0$	$D_A(0.57)$	$1387.7 \pm 7.6$
$r$	$< 0.0440$	$10^9 A_s$	$2.179^{+0.047}_{-0.054}$	$F_{\text{AP}}(0.57)$	$0.6758 \pm 0.0019$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	$1.877 \pm 0.012$	$f\sigma_8(0.57)$	$0.4790 \pm 0.0067$
$A_{217}^{\text{CIB}}$	$63.9 \pm 6.7$	$D_{40}$	$1243^{+15}_{-17}$	$\sigma_8(0.57)$	$0.6134 \pm 0.0072$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$D_{220}$	$5716 \pm 40$	$r_{0.002}$	$< 0.0403$
$A_{143}^{\text{tSZ}}$	$5.2 \pm 1.9$	$D_{810}$	$2534 \pm 14$	$r_{0.01}$	$< 0.0421$
$A_{100}^{\text{PS}}$	$257 \pm 28$	$D_{1420}$	$815.1^{+5.3}_{-4.8}$	$\ln(10^{10} A_t)$	$-0.73^{+1.4}_{-0.67}$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$D_{2000}$	$230.4 \pm 1.7$	$r_{10}$	$< 0.0203$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$n_{\text{s},0.002}$	$0.9674 \pm 0.0044$	$10^9 A_t$	$< 0.0959$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$Y_{\text{P}}$	$0.245337 \pm 0.000089$	$10^9 A_t e^{-2\tau}$	$< 0.0824$
$A^{\text{kSZ}}$	$< 4.54$	$Y_{\text{P}}^{\text{BBN}}$	$0.246663 \pm 0.000090$	$f_{2000}^{143}$	$29.9 \pm 2.8$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$10^5 \text{D}/\text{H}$	$2.615 \pm 0.037$	$f_{2000}^{143 \times 217}$	$32.3 \pm 2.0$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.8$	$\text{Age}/\text{Gyr}$	$13.804 \pm 0.028$	$f_{2000}^{217}$	$106.0 \pm 1.9$
$A_{143 \times 217}^{\text{dustTT}}$	$17.2 \pm 4.2$	$z_*$	$1089.99 \pm 0.30$	$\chi_{\text{WMAPTEB}}^2$	$19736.5 \pm 2.7$
$A_{217}^{\text{dustTT}}$	$81.9 \pm 7.5$	$r_*$	$144.77 \pm 0.32$	$\chi_{\text{plik}}^2$	$777.6 \pm 7.4$
$c_{100}$	$0.99787 \pm 0.00079$	$100\theta_*$	$1.04117 \pm 0.00042$	$\chi_{6\text{DF}}^2$	$0.064 \pm 0.083$
$c_{217}$	$0.9960 \pm 0.0014$	$D_A/\text{Gpc}$	$13.905 \pm 0.032$	$\chi_{\text{MGS}}^2$	$1.32 \pm 0.53$
$H_0$	$67.61 \pm 0.56$	$z_{\text{drag}}$	$1059.58 \pm 0.44$	$\chi_{\text{DR11CMass}}^2$	$2.90 \pm 0.70$
$\Omega_\Lambda$	$0.6894 \pm 0.0076$	$r_{\text{drag}}$	$147.48 \pm 0.35$	$\chi_{\text{DR11LOWZ}}^2$	$0.77 \pm 0.61$
$\Omega_m$	$0.3106 \pm 0.0076$	$k_{\text{D}}$	$0.14036 \pm 0.00045$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$\Omega_m h^2$	$0.1419 \pm 0.0012$	$100\theta_{\text{D}}$	$0.16097 \pm 0.00026$	$\chi_{\text{CMB}}^2$	$20514.1 \pm 7.5$
$\Omega_m h^3$	$0.09596 \pm 0.00046$	$z_{\text{eq}}$	$3376 \pm 29$	$\chi_{\text{BAO}}^2$	$5.1 \pm 1.0$

$$\bar{\chi}_{\text{eff}}^2 = 20526.53; \Delta\chi_{\text{eff}}^2 = 1.63; R - 1 = 0.01956$$

## 21 w

### 21.1 base\_w\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022334	$0.02228 \pm 0.00023$	$\Omega_m$	0.1421	$0.205^{+0.022}_{-0.069}$	$D_A/\text{Gpc}$	13.8970	$13.891 \pm 0.045$
$\Omega_c h^2$	0.11911	$0.1195 \pm 0.0022$	$\Omega_m h^2$	0.14209	$0.1425 \pm 0.0021$	$z_{\text{drag}}$	1059.780	$1059.69 \pm 0.48$
$100\theta_{\text{MC}}$	1.040970	$1.04092 \pm 0.00049$	$\Omega_m h^3$	0.1421	$0.122^{+0.020}_{-0.0099}$	$r_{\text{drag}}$	147.369	$147.32 \pm 0.49$
$\tau$	0.0778	$0.076 \pm 0.020$	$\sigma_8$	1.093	$0.980^{+0.11}_{-0.058}$	$k_D$	0.14055	$0.14055 \pm 0.00053$
$w$	-1.936	$-1.54^{+0.20}_{-0.40}$	$\sigma_8 \Omega_m^{0.5}$	0.4119	$0.436^{+0.017}_{-0.025}$	$100\theta_D$	0.160845	$0.16091 \pm 0.00027$
$\ln(10^{10} A_s)$	3.0881	$3.085 \pm 0.037$	$\sigma_8 \Omega_m^{0.25}$	0.6708	$0.652^{+0.024}_{-0.019}$	$z_{\text{eq}}$	3380	$3389 \pm 50$
$n_s$	0.9674	$0.9660 \pm 0.0061$	$\sigma_8/h^{0.5}$	1.0926	$1.062^{+0.038}_{-0.028}$	$k_{\text{eq}}$	0.010316	$0.01034 \pm 0.00015$
$y_{\text{cal}}$	1.00011	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.573	$2.547^{+0.056}_{-0.051}$	$100\theta_{\text{eq}}$	0.8172	$0.8155 \pm 0.0094$
$A_{217}^{\text{CIB}}$	65.4	$63.4 \pm 6.6$	$z_{\text{re}}$	9.86	$9.6^{+1.9}_{-1.7}$	$100\theta_{\text{s,eq}}$	0.45145	$0.4506 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$10^9 A_s$	2.194	$2.189 \pm 0.082$	$r_{\text{drag}}/D_V(0.57)$	0.07623	$0.0745^{+0.0021}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	7.03	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8777	$1.880 \pm 0.014$	$H(0.57)$	88.99	$90.9^{+1.8}_{-1.3}$
$A_{100}^{\text{PS}}$	250.3	$256 \pm 28$	$D_{40}$	1227.1	$1233^{+14}_{-16}$	$D_A(0.57)$	1235.4	$1294^{+25}_{-64}$
$A_{143}^{\text{PS}}$	40.1	$43 \pm 8$	$D_{220}$	5722.5	$5722 \pm 41$	$F_{\text{AP}}(0.57)$	0.5758	$0.616^{+0.016}_{-0.042}$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39 \pm 10$	$D_{810}$	2532.4	$2534 \pm 14$	$f\sigma_8(0.57)$	0.690	$0.599^{+0.087}_{-0.050}$
$A_{217}^{\text{PS}}$	99.1	$98 \pm 10$	$D_{1420}$	814.5	$814.5 \pm 5.0$	$\sigma_8(0.57)$	0.837	$0.743^{+0.093}_{-0.045}$
$A^{\text{kSZ}}$	0.00	$< 4.29$	$D_{2000}$	230.88	$230.6 \pm 1.8$	$f_{2000}^{143}$	28.80	$29.4 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.39	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9674	$0.9660 \pm 0.0061$	$f_{2000}^{143 \times 217}$	31.60	$32.0 \pm 2.1$
$A_{143}^{\text{dustTT}}$	8.94	$9.0 \pm 1.8$	$Y_{\text{P}}$	0.245377	$0.24535 \pm 0.00011$	$f_{2000}^{217}$	105.19	$105.7 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.48	$17.0 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	0.246703	$0.24668 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10495.14	$10496.4 \pm 2.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$10^5 D/H$	2.5982	$2.609 \pm 0.044$	$\chi_{\text{plik}}^2$	761.9	$776.1 \pm 5.5$
$c_{100}$	0.99794	$0.99790 \pm 0.00078$	Age/Gyr	13.432	$13.573^{+0.063}_{-0.16}$	$\chi_{\text{prior}}^2$	1.86	$7.2 \pm 3.5$
$c_{217}$	0.99581	$0.9959 \pm 0.0014$	$z_*$	1089.887	$1090.00 \pm 0.43$	$\chi_{\text{CMB}}^2$	11257.0	$11272.6 \pm 5.6$
$H_0$	99.99	$> 80.9$	$r_*$	144.69	$144.62 \pm 0.49$			
$\Omega_\Lambda$	0.8579	$0.795^{+0.069}_{-0.022}$	$100\theta_*$	1.041157	$1.04111 \pm 0.00048$			

Best-fit  $\chi_{\text{eff}}^2 = 11258.91$ ;  $\Delta\chi_{\text{eff}}^2 = -3.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11279.77$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.05$ ;  $R - 1 = 0.01604$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.14 ( $\Delta$  -1.33) plik\_dx11dr2\_HM\_v18\_TT: 761.92 ( $\Delta$  -1.46)



## 21.2 base\_w\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022254	$0.02223 \pm 0.00023$	$\Omega_m$	0.3054	$0.306 \pm 0.016$	$D_A/\text{Gpc}$	13.8911	$13.891 \pm 0.046$
$\Omega_c h^2$	0.11962	$0.1197 \pm 0.0022$	$\Omega_m h^2$	0.14252	$0.1426 \pm 0.0021$	$z_{\text{drag}}$	1059.628	$1059.59^{+0.51}_{-0.45}$
$100\theta_{\text{MC}}$	1.04088	$1.04089 \pm 0.00049$	$\Omega_m h^3$	0.09737	$0.0974 \pm 0.0024$	$r_{\text{drag}}$	147.32	$147.33^{+0.54}_{-0.48}$
$\tau$	0.0788	$0.078 \pm 0.020$	$\sigma_8$	0.8395	$0.838 \pm 0.022$	$k_D$	0.14054	$0.14051 \pm 0.00052$
$w$	-1.032	$-1.032 \pm 0.057$	$\sigma_8 \Omega_m^{0.5}$	0.4639	$0.464^{+0.015}_{-0.013}$	$100\theta_D$	0.160925	$0.16096 \pm 0.00027$
$\ln(10^{10} A_s)$	3.0919	$3.090 \pm 0.037$	$\sigma_8 \Omega_m^{0.25}$	0.6241	$0.623 \pm 0.015$	$z_{\text{eq}}$	3390	$3391 \pm 50$
$n_s$	0.9665	$0.9658 \pm 0.0061$	$\sigma_8/h^{0.5}$	1.0157	$1.015 \pm 0.022$	$k_{\text{eq}}$	0.010348	$0.01035 \pm 0.00015$
$y_{\text{cal}}$	1.00048	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.5031	$2.502 \pm 0.048$	$100\theta_{\text{eq}}$	0.8150	$0.8150 \pm 0.0095$
$A_{217}^{\text{CIB}}$	65.8	$63.5 \pm 6.6$	$z_{\text{re}}$	10.05	$9.9^{+2.2}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45038	$0.4504 \pm 0.0049$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$10^9 A_s$	2.202	$2.198 \pm 0.082$	$r_{\text{drag}}/D_V(0.57)$	0.07169	$0.07167^{+0.00071}_{-0.00081}$
$A_{143}^{\text{tSZ}}$	7.02	$5.3^{+2.3}_{-2.0}$	$10^9 A_s e^{-2\tau}$	1.8806	$1.879^{+0.015}_{-0.012}$	$H(0.57)$	92.868	$92.84 \pm 0.47$
$A_{100}^{\text{PS}}$	251.7	$256^{+30}_{-30}$	$D_{40}$	1234.7	$1236 \pm 14$	$D_A(0.57)$	1383.2	$1384 \pm 15$
$A_{143}^{\text{PS}}$	40.7	$43 \pm 8$	$D_{220}$	5717.8	$5713 \pm 43$	$F_{\text{AP}}(0.57)$	0.6727	$0.6729 \pm 0.0066$
$A_{143 \times 217}^{\text{PS}}$	36.4	$39 \pm 10$	$D_{810}$	2535.6	$2532^{+15}_{-12}$	$f\sigma_8(0.57)$	0.4899	$0.489 \pm 0.016$
$A_{217}^{\text{PS}}$	99.4	$98 \pm 10$	$D_{1420}$	815.4	$814.0 \pm 5.2$	$\sigma_8(0.57)$	0.6249	$0.624 \pm 0.016$
$A^{\text{kSZ}}$	0.00	$< 4.58$	$D_{2000}$	230.72	$230.2 \pm 1.8$	$f_{2000}^{143}$	29.27	$29.9 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.46	$7.5^{+1.7}_{-2.0}$	$n_{\text{s},0.002}$	0.9665	$0.9658 \pm 0.0061$	$f_{2000}^{143 \times 217}$	32.06	$32.3 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.00	$9.0 \pm 2.0$	$Y_{\text{P}}$	0.245342	$0.24533 \pm 0.00011$	$f_{2000}^{217}$	105.70	$105.9 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.69	$17.1 \pm 4.3$	$Y_{\text{P}}^{\text{BBN}}$	0.246668	$0.24666 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	10496.31	$10497.4 \pm 2.4$
$A_{217}^{\text{dustTT}}$	82.3	$81.8^{+8.4}_{-6.7}$	$10^5 D/H$	2.6133	$2.618 \pm 0.045$	$\chi_{\text{plik}}^2$	763.4	$780 \pm 29$
$c_{100}$	0.99792	$0.99788 \pm 0.00079$	Age/Gyr	13.7895	$13.793 \pm 0.044$	$\chi_{\text{JLA}}^2$	706.69	$707.7 \pm 1.4$
$c_{217}$	0.99590	$0.9958 \pm 0.0015$	$z_*$	1090.035	$1090.07^{+0.50}_{-0.41}$	$\chi_{\text{prior}}^2$	1.94	$7.6 \pm 4.5$
$H_0$	68.32	$68.3 \pm 1.6$	$r_*$	144.62	$144.62 \pm 0.50$	$\chi_{\text{CMB}}^2$	11259.8	$11280 \pm 29$
$\Omega_\Lambda$	0.6946	$0.694 \pm 0.016$	$100\theta_*$	1.04107	$1.04109 \pm 0.00048$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.38$ ;  $\Delta\chi_{\text{eff}}^2 = -0.35$ ;  $\bar{\chi}_{\text{eff}}^2 = 11992.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 3.68$ ;  $R - 1 = 0.08168$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10496.31 ( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18.TT: 763.44 ( $\Delta$  0.02) SN - JLA December\_2013: 706.68 ( $\Delta$  -0.08)

### 21.3 base\_w\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022332	$0.02229 \pm 0.00024$	$\Omega_m$	0.152	$0.224^{+0.034}_{-0.090}$	$D_A/\text{Gpc}$	13.9303	$13.919 \pm 0.041$
$\Omega_c h^2$	0.11767	$0.1183 \pm 0.0020$	$\Omega_m h^2$	0.14065	$0.1412 \pm 0.0019$	$z_{\text{drag}}$	1059.666	$1059.62^{+0.46}_{-0.53}$
$100\theta_{\text{MC}}$	1.041174	$1.04110 \pm 0.00049$	$\Omega_m h^3$	0.1354	$0.116^{+0.022}_{-0.013}$	$r_{\text{drag}}$	147.755	$147.64 \pm 0.44$
$\tau$	0.0575	$0.059 \pm 0.018$	$\sigma_8$	1.031	$0.924^{+0.12}_{-0.067}$	$k_D$	0.140142	$0.14022 \pm 0.00049$
$w$	-1.802	$-1.41^{+0.26}_{-0.46}$	$\sigma_8 \Omega_m^{0.5}$	0.4013	$0.427^{+0.017}_{-0.030}$	$100\theta_D$	0.160924	$0.16096 \pm 0.00027$
$\ln(10^{10} A_s)$	3.0433	$3.049 \pm 0.033$	$\sigma_8 \Omega_m^{0.25}$	0.6431	$0.626^{+0.021}_{-0.015}$	$z_{\text{eq}}$	3345.6	$3360 \pm 45$
$n_s$	0.9698	$0.9681^{+0.0054}_{-0.0062}$	$\sigma_8/h^{0.5}$	1.0501	$1.022^{+0.035}_{-0.023}$	$k_{\text{eq}}$	0.010211	$0.01025 \pm 0.00014$
$y_{\text{cal}}$	0.99988	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4905	$2.471^{+0.034}_{-0.030}$	$100\theta_{\text{eq}}$	0.8237	$0.8210 \pm 0.0086$
$A_{217}^{\text{CIB}}$	67.5	$64.5 \pm 6.7$	$z_{\text{re}}$	7.91	$8.1^{+2.0}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45482	$0.4535 \pm 0.0044$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.097	$2.110 \pm 0.070$	$r_{\text{drag}}/D_V(0.57)$	0.07659	$0.0743^{+0.0028}_{-0.0014}$
$A_{143}^{\text{tSZ}}$	7.16	$5.2 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8695	$1.873 \pm 0.013$	$H(0.57)$	90.02	$91.6^{+1.8}_{-1.4}$
$A_{100}^{\text{PS}}$	254.2	$259 \pm 28$	$D_{40}$	1213.1	$1221 \pm 13$	$D_A(0.57)$	1239	$1308^{+36}_{-84}$
$A_{143}^{\text{PS}}$	38.8	$44 \pm 8$	$D_{220}$	5719.6	$5720 \pm 41$	$F_{\text{AP}}(0.57)$	0.5839	$0.628^{+0.024}_{-0.052}$
$A_{143 \times 217}^{\text{PS}}$	32.1	$39 \pm 10$	$D_{810}$	2530.1	$2531^{+15}_{-13}$	$f\sigma_8(0.57)$	0.640	$0.557^{+0.093}_{-0.058}$
$A_{217}^{\text{PS}}$	96.5	$96 \pm 10$	$D_{1420}$	814.5	$814.4 \pm 5.2$	$\sigma_8(0.57)$	0.790	$0.699^{+0.10}_{-0.055}$
$A^{\text{kSZ}}$	0.01	$< 4.83$	$D_{2000}$	230.28	$230.1^{+1.8}_{-2.0}$	$f_{2000}^{143}$	29.79	$30.3 \pm 3.0$
$A_{100}^{\text{dustTT}}$	7.43	$7.5 \pm 1.9$	$n_{\text{s},0.002}$	0.9698	$0.9681^{+0.0054}_{-0.0062}$	$f_{2000}^{143 \times 217}$	32.35	$32.8 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.16	$9.1 \pm 1.8$	$Y_{\text{P}}$	0.245376	$0.24535 \pm 0.00011$	$f_{2000}^{217}$	105.86	$106.3 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.1 \pm 4.3$	$Y_{\text{P}}^{\text{BBN}}$	0.246703	$0.24668 \pm 0.00011$	$\chi_{\text{lensing}}^2$	9.50	$10.1 \pm 1.8$
$A_{217}^{\text{dustTT}}$	81.8	$81.5 \pm 7.6$	$10^5 D/H$	2.5985	$2.608 \pm 0.045$	$\chi_{\text{lowTEB}}^2$	10493.77	$10495.1 \pm 1.4$
$c_{100}$	0.99793	$0.99790 \pm 0.00078$	Age/Gyr	13.445	$13.611^{+0.088}_{-0.21}$	$\chi_{\text{plik}}^2$	766.0	$780 \pm 11$
$c_{217}$	0.99597	$0.9959 \pm 0.0015$	$z_*$	1089.764	$1089.88 \pm 0.42$	$\chi_{\text{prior}}^2$	2.01	$7.5 \pm 3.8$
$H_0$	96.3	$> 76.0$	$r_*$	145.066	$144.94 \pm 0.44$	$\chi_{\text{CMB}}^2$	11269.3	$11280 \pm 11$
$\Omega_\Lambda$	0.848	$0.776^{+0.090}_{-0.034}$	$100\theta_*$	1.041366	$1.04129 \pm 0.00048$			

Best-fit  $\chi_{\text{eff}}^2 = 11271.28$ ;  $\Delta\chi_{\text{eff}}^2 = -1.15$ ;  $\bar{\chi}_{\text{eff}}^2 = 11292.49$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.19$ ;  $R - 1 = 0.04349$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.50 ( $\Delta$  0.32) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10493.77 ( $\Delta$  -1.08) plik\_dx11dr2\_HM\_v18\_TT: 766.00 ( $\Delta$  -0.32)

## 21.4 base\_w\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022258	$0.02223 \pm 0.00023$	$\Omega_m$	0.2761	$0.279^{+0.024}_{-0.030}$	$D_A/\text{Gpc}$	13.8894	$13.887 \pm 0.046$
$\Omega_c h^2$	0.11968	$0.1199 \pm 0.0022$	$\Omega_m h^2$	0.14259	$0.1428 \pm 0.0021$	$z_{\text{drag}}$	1059.666	$1059.59 \pm 0.47$
$100\theta_{\text{MC}}$	1.04088	$1.04087 \pm 0.00050$	$\Omega_m h^3$	0.10247	$0.1025 \pm 0.0050$	$r_{\text{drag}}$	147.30	$147.28 \pm 0.50$
$\tau$	0.0775	$0.076 \pm 0.020$	$\sigma_8$	0.8720	$0.871 \pm 0.035$	$k_D$	0.14056	$0.14055 \pm 0.00053$
$w$	-1.148	$-1.15 \pm 0.11$	$\sigma_8 \Omega_m^{0.5}$	0.4582	$0.459 \pm 0.013$	$100\theta_D$	0.160917	$0.16096 \pm 0.00027$
$\ln(10^{10} A_s)$	3.0891	$3.086 \pm 0.037$	$\sigma_8 \Omega_m^{0.25}$	0.6321	$0.632 \pm 0.017$	$z_{\text{eq}}$	3392	$3396 \pm 50$
$n_s$	0.9663	$0.9651 \pm 0.0059$	$\sigma_8/h^{0.5}$	1.0287	$1.028 \pm 0.025$	$k_{\text{eq}}$	0.010353	$0.01037 \pm 0.00015$
$y_{\text{cal}}$	1.00026	$1.0002 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.518	$2.518 \pm 0.050$	$100\theta_{\text{eq}}$	0.8148	$0.8140 \pm 0.0094$
$A_{217}^{\text{CIB}}$	65.3	$63.6 \pm 6.7$	$z_{\text{re}}$	9.92	$9.7^{+2.0}_{-1.6}$	$100\theta_{\text{s,eq}}$	0.45024	$0.4499 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$10^9 A_s$	2.196	$2.191 \pm 0.082$	$r_{\text{drag}}/D_V(0.57)$	0.07251	$0.07239 \pm 0.00095$
$A_{143}^{\text{tSZ}}$	6.96	$5.1 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8804	$1.881 \pm 0.014$	$H(0.57)$	92.62	$92.51^{+0.66}_{-0.55}$
$A_{100}^{\text{PS}}$	251.3	$258 \pm 28$	$D_{40}$	1233.1	$1236 \pm 14$	$D_A(0.57)$	1357.6	$1360^{+23}_{-26}$
$A_{143}^{\text{PS}}$	42.1	$44 \pm 8$	$D_{220}$	5716.7	$5716 \pm 41$	$F_{\text{AP}}(0.57)$	0.6585	$0.659 \pm 0.013$
$A_{143 \times 217}^{\text{PS}}$	39.1	$39 \pm 10$	$D_{810}$	2534.6	$2533^{+15}_{-13}$	$f\sigma_8(0.57)$	0.5137	$0.514 \pm 0.027$
$A_{217}^{\text{PS}}$	100.4	$98 \pm 10$	$D_{1420}$	815.0	$814.1 \pm 5.1$	$\sigma_8(0.57)$	0.6523	$0.651 \pm 0.029$
$A^{\text{kSZ}}$	0.01	$< 4.49$	$D_{2000}$	230.67	$230.3 \pm 1.8$	$f_{2000}^{143}$	29.18	$29.9 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.37	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	0.9663	$0.9651 \pm 0.0059$	$f_{2000}^{143 \times 217}$	32.05	$32.3 \pm 2.0$
$A_{143}^{\text{dustTT}}$	9.00	$9.0 \pm 1.9$	$Y_{\text{P}}$	0.245343	$0.24533 \pm 0.00010$	$f_{2000}^{217}$	105.61	$106.0 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	17.72	$17.1 \pm 4.3$	$Y_{\text{P}}^{\text{BBN}}$	0.246670	$0.24665 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10495.99	$10497.1 \pm 2.3$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.5$	$10^5 D/H$	2.6125	$2.619 \pm 0.044$	$\chi_{\text{plik}}^2$	763.2	$778 \pm 16$
$c_{100}$	0.99793	$0.99788 \pm 0.00077$	Age/Gyr	13.724	$13.733^{+0.061}_{-0.070}$	$\chi_{\text{H070p6}}^2$	0.090	$0.99 \pm 1.4$
$c_{217}$	0.99584	$0.9959 \pm 0.0015$	$z_*$	1090.035	$1090.10^{+0.47}_{-0.42}$	$\chi_{\text{prior}}^2$	1.83	$7.3 \pm 3.9$
$H_0$	71.86	$71.8 \pm 3.4$	$r_*$	144.60	$144.57 \pm 0.50$	$\chi_{\text{CMB}}^2$	11259.1	$11270 \pm 17$
$\Omega_\Lambda$	0.7239	$0.721^{+0.030}_{-0.024}$	$100\theta_*$	1.041074	$1.04107 \pm 0.00049$			

Best-fit  $\chi_{\text{eff}}^2 = 11261.07$ ;  $\Delta\chi_{\text{eff}}^2 = -1.75$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.02$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.32$ ;  $R - 1 = 0.03023$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10495.99 ( $\Delta$  -0.34) plik\_dx11dr2\_HM\_v18\_TT: 763.16 ( $\Delta$  -0.50) Hubble - H070p6: 0.09 ( $\Delta$  -0.74)

## 21.5 base\_w\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02228 \pm 0.00023$	$\Omega_m$	$0.207^{+0.023}_{-0.070}$	$D_A/\text{Gpc}$	$13.893 \pm 0.045$
$\Omega_c h^2$	$0.1195 \pm 0.0022$	$\Omega_m h^2$	$0.1424 \pm 0.0021$	$z_{\text{drag}}$	$1059.70 \pm 0.47$
$100\theta_{\text{MC}}$	$1.04094 \pm 0.00048$	$\Omega_m h^3$	$0.121^{+0.020}_{-0.010}$	$r_{\text{drag}}$	$147.33 \pm 0.49$
$\tau$	$0.078^{+0.017}_{-0.021}$	$\sigma_8$	$0.979^{+0.11}_{-0.059}$	$k_D$	$0.14054 \pm 0.00052$
$w$	$-1.53^{+0.20}_{-0.40}$	$\sigma_8 \Omega_m^{0.5}$	$0.436^{+0.017}_{-0.025}$	$100\theta_D$	$0.16090 \pm 0.00027$
$\ln(10^{10} A_s)$	$3.089^{+0.032}_{-0.039}$	$\sigma_8 \Omega_m^{0.25}$	$0.652^{+0.024}_{-0.018}$	$z_{\text{eq}}$	$3387 \pm 49$
$n_s$	$0.9663 \pm 0.0060$	$\sigma_8/h^{0.5}$	$1.062^{+0.039}_{-0.028}$	$k_{\text{eq}}$	$0.01034 \pm 0.00015$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	$2.549^{+0.055}_{-0.049}$	$100\theta_{\text{eq}}$	$0.8159 \pm 0.0093$
$A_{217}^{\text{CIB}}$	$63.4 \pm 6.7$	$z_{\text{re}}$	$9.8 \pm 1.6$	$100\theta_{\text{s,eq}}$	$0.4508 \pm 0.0048$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.196^{+0.068}_{-0.089}$	$r_{\text{drag}}/D_V(0.57)$	$0.0745^{+0.0021}_{-0.0012}$
$A_{143}^{\text{tSZ}}$	$5.2 \pm 1.9$	$10^9 A_s e^{-2\tau}$	$1.879 \pm 0.014$	$H(0.57)$	$91.0^{+1.8}_{-1.3}$
$A_{100}^{\text{PS}}$	$256 \pm 28$	$D_{40}$	$1232 \pm 15$	$D_A(0.57)$	$1295^{+26}_{-65}$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$D_{220}$	$5722 \pm 41$	$F_{\text{AP}}(0.57)$	$0.617^{+0.017}_{-0.042}$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{810}$	$2533 \pm 14$	$f\sigma_8(0.57)$	$0.598^{+0.087}_{-0.051}$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$D_{1420}$	$814.3 \pm 5.1$	$\sigma_8(0.57)$	$0.742^{+0.093}_{-0.047}$
$A^{\text{kSZ}}$	$< 4.36$	$D_{2000}$	$230.6 \pm 1.8$	$f_{2000}^{143}$	$29.4 \pm 2.9$
$A_{100}^{\text{dustTT}}$	$7.4 \pm 1.9$	$n_{\text{s},0.002}$	$0.9663 \pm 0.0060$	$f_{2000}^{143 \times 217}$	$32.0 \pm 2.1$
$A_{143}^{\text{dustTT}}$	$9.0 \pm 1.9$	$Y_{\text{P}}$	$0.24535 \pm 0.00011$	$f_{2000}^{217}$	$105.7 \pm 2.0$
$A_{143 \times 217}^{\text{dustTT}}$	$17.0 \pm 4.2$	$Y_{\text{P}}^{\text{BBN}}$	$0.24668 \pm 0.00011$	$\chi_{\text{lowTEB}}^2$	$10496.4 \pm 2.2$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.5$	$10^5 \text{D}/\text{H}$	$2.608 \pm 0.044$	$\chi_{\text{plik}}^2$	$776 \pm 10$
$c_{100}$	$0.99789 \pm 0.00078$	$\text{Age}/\text{Gyr}$	$13.574^{+0.064}_{-0.16}$	$\chi_{\text{prior}}^2$	$7.3 \pm 3.6$
$c_{217}$	$0.9959 \pm 0.0015$	$z_*$	$1089.98 \pm 0.43$	$\chi_{\text{CMB}}^2$	$11270 \pm 11$
$H_0$	$> 80.5$	$r_*$	$144.64 \pm 0.49$		
$\Omega_\Lambda$	$0.793^{+0.070}_{-0.023}$	$100\theta_*$	$1.04113 \pm 0.00047$		

$$\bar{\chi}_{\text{eff}}^2 = 11280.10; \Delta\bar{\chi}_{\text{eff}}^2 = -1.54; R - 1 = 0.01069$$

## 21.6 base\_w\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022303	$0.02229 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.302 \pm 0.084$	Age/Gyr	13.441	$13.570^{+0.054}_{-0.14}$
$\Omega_c h^2$	0.11947	$0.1196 \pm 0.0015$	$A_{143}^{\text{dust}TE}$	0.152	$0.154 \pm 0.054$	$z_*$	1089.959	$1089.99 \pm 0.29$
$100\theta_{\text{MC}}$	1.040828	$1.04080 \pm 0.00031$	$A_{143 \times 217}^{\text{dust}TE}$	0.336	$0.338 \pm 0.081$	$r_*$	144.620	$144.60 \pm 0.32$
$\tau$	0.0742	$0.075 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.662	$1.67 \pm 0.26$	$100\theta_*$	1.041013	$1.04100 \pm 0.00031$
$w$	-1.947	$-1.55^{+0.19}_{-0.38}$	$c_{100}$	0.99819	$0.99818 \pm 0.00077$	$D_A/\text{Gpc}$	13.8922	$13.891 \pm 0.030$
$\ln(10^{10} A_s)$	3.0823	$3.085 \pm 0.033$	$c_{217}$	0.99585	$0.9959 \pm 0.0014$	$z_{\text{drag}}$	1059.742	$1059.71 \pm 0.32$
$n_s$	0.96536	$0.9649 \pm 0.0048$	$H_0$	99.9	$> 81.3$	$r_{\text{drag}}$	147.307	$147.30 \pm 0.31$
$y_{\text{cal}}$	0.999996	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	0.8573	$0.797^{+0.065}_{-0.022}$	$k_D$	0.140589	$0.14058 \pm 0.00033$
$A_{217}^{\text{CIB}}$	65.1	$63.6 \pm 6.5$	$\Omega_m$	0.1427	$0.203^{+0.022}_{-0.065}$	$100\theta_D$	0.160852	$0.16087 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$\Omega_m h^2$	0.14242	$0.1425 \pm 0.0014$	$z_{\text{eq}}$	3387.9	$3390 \pm 33$
$A_{143}^{\text{tSZ}}$	7.12	$5.4 \pm 1.9$	$\Omega_m h^3$	0.1423	$0.122^{+0.019}_{-0.0097}$	$k_{\text{eq}}$	0.010340	$0.01035 \pm 0.00010$
$A_{100}^{\text{PS}}$	253.2	$259 \pm 28$	$\sigma_8$	1.092	$0.983^{+0.10}_{-0.055}$	$100\theta_{\text{eq}}$	0.8156	$0.8152 \pm 0.0062$
$A_{143}^{\text{PS}}$	41.0	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4123	$0.435^{+0.014}_{-0.023}$	$100\theta_{\text{s,eq}}$	0.45063	$0.4504 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	38.8	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6709	$0.653^{+0.021}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	0.07603	$0.0745^{+0.0018}_{-0.00088}$
$A_{217}^{\text{PS}}$	100.3	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0922	$1.063^{+0.034}_{-0.024}$	$H(0.57)$	88.82	$90.8 \pm 1.3$
$A^{\text{kSZ}}$	0.00	$< 3.96$	$\langle d^2 \rangle^{1/2}$	2.5739	$2.551 \pm 0.045$	$D_A(0.57)$	1238.3	$1293^{+23}_{-59}$
$A_{100}^{\text{dust}TT}$	7.33	$7.4 \pm 1.8$	$z_{\text{re}}$	9.55	$9.6 \pm 1.6$	$F_{\text{AP}}(0.57)$	0.5759	$0.615^{+0.016}_{-0.040}$
$A_{143}^{\text{dust}TT}$	8.95	$8.9 \pm 1.8$	$10^9 A_s$	2.181	$2.188^{+0.070}_{-0.078}$	$f\sigma_8(0.57)$	0.691	$0.602^{+0.083}_{-0.047}$
$A_{143 \times 217}^{\text{dust}TT}$	17.50	$17.0 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8801	$1.881 \pm 0.012$	$\sigma_8(0.57)$	0.835	$0.745^{+0.088}_{-0.044}$
$A_{217}^{\text{dust}TT}$	81.8	$81.6 \pm 7.4$	$D_{40}$	1231.3	$1236 \pm 13$	$f_{2000}^{143}$	28.77	$29.3 \pm 2.7$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0813 \pm 0.0056$	$D_{220}$	5729.8	$5733 \pm 38$	$f_{2000}^{143 \times 217}$	31.81	$32.0 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.04889	$0.0488 \pm 0.0050$	$D_{810}$	2533.2	$2535 \pm 13$	$f_{2000}^{217}$	105.38	$105.6 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.0990	$0.0997 \pm 0.033$	$D_{1420}$	813.97	$814.3^{+5.1}_{-4.5}$	$\chi_{\text{lowTEB}}^2$	10495.27	$10496.5 \pm 1.9$
$A_{143}^{\text{dust}EE}$	0.1003	$0.1002 \pm 0.0068$	$D_{2000}$	230.55	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	2430.1	$2449.4 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2237	$0.224 \pm 0.046$	$n_{s,0.002}$	0.96536	$0.9649 \pm 0.0048$	$\chi_{\text{prior}}^2$	6.9	$19.2 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$Y_P$	0.245363	$0.245354 \pm 0.000072$	$\chi_{\text{CMB}}^2$	12925.4	$12945.8 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1423	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246690	$0.246680 \pm 0.000072$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1306	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.6040	$2.607 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 12932.27$ ;  $\Delta\chi_{\text{eff}}^2 = -3.29$ ;  $\bar{\chi}_{\text{eff}}^2 = 12965.06$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -2.63$ ;  $R - 1 = 0.00999$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10495.27 ( $\Delta$  -1.67) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2430.09 ( $\Delta$  -1.55)

## 21.7 base\_w\_plikHM\_TTTEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022298	$0.02228 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.305	$0.302 \pm 0.082$	Age/Gyr	13.521	$13.619^{+0.075}_{-0.20}$
$\Omega_c h^2$	0.11884	$0.1190 \pm 0.0014$	$A_{143}^{\text{dustTE}}$	0.154	$0.156 \pm 0.054$	$z_*$	1089.908	$1089.94 \pm 0.29$
$100\theta_{\text{MC}}$	1.040919	$1.04089 \pm 0.00031$	$A_{143 \times 217}^{\text{dustTE}}$	0.336	$0.339 \pm 0.080$	$r_*$	144.786	$144.76 \pm 0.31$
$\tau$	0.0529	$0.056 \pm 0.015$	$A_{217}^{\text{dustTE}}$	1.668	$1.66 \pm 0.25$	$100\theta_*$	1.041114	$1.04108 \pm 0.00030$
$w$	-1.621	$-1.42^{+0.25}_{-0.47}$	$c_{100}$	0.99816	$0.99810 \pm 0.00079$	$D_A/\text{Gpc}$	13.9069	$13.905 \pm 0.028$
$\ln(10^{10} A_s)$	3.0369	$3.045^{+0.026}_{-0.029}$	$c_{217}$	0.99602	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.704	$1059.66 \pm 0.31$
$n_s$	0.96637	$0.9658 \pm 0.0048$	$H_0$	88.2	$> 75.9$	$r_{\text{drag}}$	147.477	$147.45 \pm 0.30$
$y_{\text{cal}}$	0.99972	$1.0001^{+0.0027}_{-0.0024}$	$\Omega_\Lambda$	0.818	$0.774^{+0.090}_{-0.033}$	$k_D$	0.140403	$0.14042 \pm 0.00032$
$A_{217}^{\text{CIB}}$	67.8	$64.7 \pm 6.4$	$\Omega_m$	0.182	$0.226^{+0.033}_{-0.090}$	$100\theta_D$	0.160895	$0.16091 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\Omega_m h^2$	0.14178	$0.1419 \pm 0.0013$	$z_{\text{eq}}$	3372.8	$3376 \pm 31$
$A_{143}^{\text{tSZ}}$	7.26	$5.3 \pm 2.0$	$\Omega_m h^3$	0.1251	$0.116^{+0.022}_{-0.016}$	$k_{\text{eq}}$	0.010294	$0.010304 \pm 0.000095$
$A_{100}^{\text{PS}}$	257.9	$263^{+26}_{-31}$	$\sigma_8$	0.978	$0.925^{+0.12}_{-0.065}$	$100\theta_{\text{eq}}$	0.8184	$0.8178 \pm 0.0060$
$A_{143}^{\text{PS}}$	38.9	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4173	$0.430^{+0.018}_{-0.028}$	$100\theta_{\text{s,eq}}$	0.45210	$0.4518 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6388	$0.629^{+0.022}_{-0.014}$	$r_{\text{drag}}/D_V(0.57)$	0.07532	$0.0740^{+0.0026}_{-0.0011}$
$A_{217}^{\text{PS}}$	96.5	$96 \pm 10$	$\sigma_8/h^{0.5}$	1.0410	$1.024^{+0.036}_{-0.021}$	$H(0.57)$	90.77	$91.4^{+1.8}_{-0.97}$
$A^{\text{kSZ}}$	0.00	$< 4.48$	$\langle d^2 \rangle^{1/2}$	2.4892	$2.478^{+0.036}_{-0.028}$	$D_A(0.57)$	1272	$1312^{+32}_{-82}$
$A_{100}^{\text{dustTT}}$	7.44	$7.5 \pm 1.8$	$z_{\text{re}}$	7.48	$7.8 \pm 1.5$	$F_{\text{AP}}(0.57)$	0.6046	$0.628^{+0.023}_{-0.052}$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.9$	$10^9 A_s$	2.084	$2.101^{+0.053}_{-0.062}$	$f\sigma_8(0.57)$	0.599	$0.559^{+0.095}_{-0.056}$
$A_{143 \times 217}^{\text{dustTT}}$	17.53	$17.2 \pm 4.2$	$10^9 A_s e^{-2\tau}$	1.8749	$1.877 \pm 0.012$	$\sigma_8(0.57)$	0.744	$0.699^{+0.10}_{-0.053}$
$A_{217}^{\text{dustTT}}$	81.5	$81.7 \pm 7.3$	$D_{40}$	1220.8	$1226 \pm 13$	$f_{2000}^{143}$	29.87	$30.2^{+2.6}_{-3.0}$
$A_{100}^{\text{dustEE}}$	0.0815	$0.0817 \pm 0.0056$	$D_{220}$	5722.9	$5727 \pm 38$	$f_{2000}^{143 \times 217}$	32.53	$32.7 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.0492	$0.0492 \pm 0.0051$	$D_{810}$	2531.2	$2533 \pm 13$	$f_{2000}^{217}$	106.00	$106.2 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0993	$0.100 \pm 0.033$	$D_{1420}$	813.96	$814.4^{+5.2}_{-4.3}$	$\chi^2_{\text{lensing}}$	10.25	$10.8 \pm 2.2$
$A_{143}^{\text{dustEE}}$	0.1004	$0.1004 \pm 0.0068$	$D_{2000}$	229.96	$230.0^{+1.7}_{-1.5}$	$\chi^2_{\text{lowTEB}}$	10494.42	$10495.3 \pm 1.4$
$A_{143 \times 217}^{\text{dustEE}}$	0.2235	$0.222 \pm 0.046$	$n_{s,0.002}$	0.96637	$0.9658 \pm 0.0048$	$\chi^2_{\text{plik}}$	2434.4	$2452.6 \pm 6.7$
$A_{217}^{\text{dustEE}}$	0.651	$0.64 \pm 0.13$	$Y_P$	0.245361	$0.245354 \pm 0.000071$	$\chi^2_{\text{prior}}$	7.1	$19.7 \pm 5.6$
$A_{100}^{\text{dustTE}}$	0.1413	$0.140 \pm 0.037$	$Y_P^{\text{BBN}}$	0.246688	$0.246680 \pm 0.000072$	$\chi^2_{\text{CMB}}$	12939.0	$12958.8 \pm 6.8$
$A_{100 \times 143}^{\text{dustTE}}$	0.1320	$0.131 \pm 0.029$	$10^5 \text{D}/\text{H}$	2.6049	$2.608 \pm 0.030$			

Best-fit  $\chi^2_{\text{eff}} = 12946.18$ ;  $\Delta\chi^2_{\text{eff}} = -1.00$ ;  $\bar{\chi}^2_{\text{eff}} = 12978.43$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -0.69$ ;  $R - 1 = 0.06336$

$\chi^2_{\text{eff}}$ : CMB - smica\_g30\_ftl\_full\_pp: 10.25 ( $\Delta$  0.48) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.42 ( $\Delta$  -0.86) plik\_dx11dr2\_HM\_v18\_TTTEE: 2434.37 ( $\Delta$  -0.54)

## 21.8 base\_w\_plikHM\_TTTEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022282	$0.02226 \pm 0.00016$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.306 \pm 0.084$	Age/Gyr	13.721	$13.728^{+0.054}_{-0.068}$
$\Omega_c h^2$	0.11970	$0.1198 \pm 0.0015$	$A_{143}^{\text{dustTE}}$	0.155	$0.156 \pm 0.053$	$z_*$	1090.006	$1090.05 \pm 0.30$
$100\theta_{\text{MC}}$	1.040783	$1.04077 \pm 0.00031$	$A_{143 \times 217}^{\text{dustTE}}$	0.339	$0.340 \pm 0.082$	$r_*$	144.575	$144.56 \pm 0.32$
$\tau$	0.0791	$0.077 \pm 0.016$	$A_{217}^{\text{dustTE}}$	1.670	$1.67 \pm 0.26$	$100\theta_*$	1.040975	$1.04097 \pm 0.00031$
$w$	-1.155	$-1.16 \pm 0.11$	$c_{100}$	0.99822	$0.99818 \pm 0.00079$	$D_A/\text{Gpc}$	13.8885	$13.887 \pm 0.030$
$\ln(10^{10} A_s)$	3.0928	$3.089 \pm 0.031$	$c_{217}$	0.99587	$0.9960^{+0.0014}_{-0.0015}$	$z_{\text{drag}}$	1059.704	$1059.66 \pm 0.32$
$n_s$	0.96568	$0.9643 \pm 0.0048$	$H_0$	72.04	$72.1 \pm 3.4$	$r_{\text{drag}}$	147.269	$147.26 \pm 0.32$
$y_{\text{cal}}$	1.00017	$1.0003^{+0.0027}_{-0.0024}$	$\Omega_\Lambda$	0.7252	$0.723^{+0.030}_{-0.024}$	$k_D$	0.140613	$0.14060 \pm 0.00033$
$A_{217}^{\text{CIB}}$	64.6	$63.9 \pm 6.5$	$\Omega_m$	0.2748	$0.277^{+0.024}_{-0.030}$	$100\theta_D$	0.160868	$0.16090 \pm 0.00019$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.31	—	$\Omega_m h^2$	0.14263	$0.1428 \pm 0.0014$	$z_{\text{eq}}$	3393.0	$3396 \pm 33$
$A_{143}^{\text{tSZ}}$	7.04	$5.4 \pm 1.9$	$\Omega_m h^3$	0.10276	$0.1029 \pm 0.0049$	$k_{\text{eq}}$	0.010356	$0.01036 \pm 0.00010$
$A_{100}^{\text{PS}}$	253.0	$259 \pm 28$	$\sigma_8$	0.8752	$0.874 \pm 0.034$	$100\theta_{\text{eq}}$	0.8146	$0.8141 \pm 0.0062$
$A_{143}^{\text{PS}}$	42.7	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4588	$0.458 \pm 0.011$	$100\theta_{\text{s,eq}}$	0.45012	$0.4499 \pm 0.0032$
$A_{143 \times 217}^{\text{PS}}$	41.7	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6336	$0.633 \pm 0.013$	$r_{\text{drag}}/D_V(0.57)$	0.07253	$0.07244^{+0.00093}_{-0.00081}$
$A_{217}^{\text{PS}}$	101.3	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0311	$1.029 \pm 0.021$	$H(0.57)$	92.593	$92.50^{+0.53}_{-0.39}$
$A^{\text{kSZ}}$	0.00	$< 4.18$	$\langle d^2 \rangle^{1/2}$	2.5247	$2.523 \pm 0.041$	$D_A(0.57)$	1356.5	$1359^{+22}_{-26}$
$A_{100}^{\text{dustTT}}$	7.41	$7.4 \pm 1.9$	$z_{\text{re}}$	10.05	$9.8 \pm 1.5$	$F_{\text{AP}}(0.57)$	0.6578	$0.658 \pm 0.013$
$A_{143}^{\text{dustTT}}$	8.88	$8.9 \pm 1.8$	$10^9 A_s$	2.204	$2.196 \pm 0.069$	$f\sigma_8(0.57)$	0.5159	$0.516 \pm 0.025$
$A_{143 \times 217}^{\text{dustTT}}$	17.64	$17.1 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8816	$1.882 \pm 0.012$	$\sigma_8(0.57)$	0.6547	$0.653 \pm 0.028$
$A_{217}^{\text{dustTT}}$	82.1	$81.9 \pm 7.3$	$D_{40}$	1236.2	$1240 \pm 13$	$f_{2000}^{143}$	28.67	$29.5^{+2.6}_{-3.0}$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0811 \pm 0.0056$	$D_{220}$	5725.5	$5730 \pm 40$	$f_{2000}^{143 \times 217}$	31.79	$32.2 \pm 1.9$
$A_{100 \times 143}^{\text{dustEE}}$	0.04894	$0.0488 \pm 0.0049$	$D_{810}$	2535.5	$2535 \pm 14$	$f_{2000}^{217}$	105.31	$105.8 \pm 1.9$
$A_{100 \times 217}^{\text{dustEE}}$	0.0994	$0.098 \pm 0.032$	$D_{1420}$	815.11	$814.3^{+5.1}_{-4.3}$	$\chi_{\text{lowTEB}}^2$	10496.38	$10497.1 \pm 2.0$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1002 \pm 0.0068$	$D_{2000}$	230.75	$230.4^{+1.7}_{-1.5}$	$\chi_{\text{plik}}^2$	2431.3	$2450.0 \pm 6.7$
$A_{143 \times 217}^{\text{dustEE}}$	0.2247	$0.221 \pm 0.046$	$n_{s,0.002}$	0.96568	$0.9643 \pm 0.0048$	$\chi_{\text{H070p6}}^2$	0.12	$1.0 \pm 1.4$
$A_{217}^{\text{dustEE}}$	0.653	$0.65 \pm 0.13$	$Y_P$	0.245354	$0.245341 \pm 0.000073$	$\chi_{\text{prior}}^2$	6.7	$19.4 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1426	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.246680	$0.246667 \pm 0.000073$	$\chi_{\text{CMB}}^2$	12927.7	$12947.2 \pm 6.7$
$A_{100 \times 143}^{\text{dustTE}}$	0.1322	$0.131 \pm 0.029$	$10^5 \text{D/H}$	2.6080	$2.613 \pm 0.030$			

Best-fit  $\chi_{\text{eff}}^2 = 12934.51$ ;  $\Delta\chi_{\text{eff}}^2 = -1.96$ ;  $\bar{\chi}_{\text{eff}}^2 = 12967.62$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.13$ ;  $R - 1 = 0.03284$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.38 ( $\Delta$  -0.62) plik\_dx11dr2\_HM\_v18\_TTTEE: 2431.28 ( $\Delta$  -0.48) Hubble - H070p6: 0.12 ( $\Delta$  -0.78)

## 21.9 base\_w\_plikHM\_TTTEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02229 \pm 0.00016$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.084$	Age/Gyr	$13.570^{+0.054}_{-0.14}$
$\Omega_c h^2$	$0.1196 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	$0.154 \pm 0.053$	$z_*$	$1089.98 \pm 0.29$
$100\theta_{\text{MC}}$	$1.04081 \pm 0.00031$	$A_{143 \times 217}^{\text{dust}TE}$	$0.339 \pm 0.081$	$r_*$	$144.61 \pm 0.32$
$\tau$	$0.076^{+0.015}_{-0.018}$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.25$	$100\theta_*$	$1.04100 \pm 0.00031$
$w$	$-1.55^{+0.19}_{-0.38}$	$c_{100}$	$0.99818 \pm 0.00077$	$D_A/\text{Gpc}$	$13.891 \pm 0.029$
$\ln(10^{10} A_s)$	$3.087^{+0.030}_{-0.035}$	$c_{217}$	$0.9959 \pm 0.0014$	$z_{\text{drag}}$	$1059.72 \pm 0.32$
$n_s$	$0.9650 \pm 0.0048$	$H_0$	$> 81.2$	$r_{\text{drag}}$	$147.30 \pm 0.31$
$y_{\text{cal}}$	$1.0003 \pm 0.0025$	$\Omega_\Lambda$	$0.797^{+0.065}_{-0.023}$	$k_D$	$0.14058 \pm 0.00033$
$A_{217}^{\text{CIB}}$	$63.5 \pm 6.5$	$\Omega_m$	$0.203^{+0.023}_{-0.065}$	$100\theta_D$	$0.16087 \pm 0.00018$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m h^2$	$0.1425 \pm 0.0014$	$z_{\text{eq}}$	$3390 \pm 32$
$A_{143}^{\text{tSZ}}$	$5.4^{+2.1}_{-1.8}$	$\Omega_m h^3$	$0.122^{+0.019}_{-0.0098}$	$k_{\text{eq}}$	$0.010345 \pm 0.000099$
$A_{100}^{\text{PS}}$	$259 \pm 28$	$\sigma_8$	$0.983^{+0.10}_{-0.055}$	$100\theta_{\text{eq}}$	$0.8153 \pm 0.0061$
$A_{143}^{\text{PS}}$	$43 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	$0.436^{+0.015}_{-0.023}$	$100\theta_{s,\text{eq}}$	$0.4505 \pm 0.0031$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.653^{+0.021}_{-0.015}$	$r_{\text{drag}}/D_V(0.57)$	$0.0745^{+0.0019}_{-0.00088}$
$A_{217}^{\text{PS}}$	$98 \pm 11$	$\sigma_8/h^{0.5}$	$1.063^{+0.034}_{-0.024}$	$H(0.57)$	$90.8 \pm 1.3$
$A^{\text{kSZ}}$	$< 3.94$	$\langle d^2 \rangle^{1/2}$	$2.553 \pm 0.044$	$D_A(0.57)$	$1293^{+23}_{-59}$
$A_{100}^{\text{dust}TT}$	$7.4 \pm 1.8$	$z_{\text{re}}$	$9.7 \pm 1.4$	$F_{\text{AP}}(0.57)$	$0.615^{+0.016}_{-0.040}$
$A_{143}^{\text{dust}TT}$	$8.9 \pm 1.8$	$10^9 A_s$	$2.193^{+0.063}_{-0.080}$	$f\sigma_8(0.57)$	$0.602^{+0.084}_{-0.047}$
$A_{143 \times 217}^{\text{dust}TT}$	$16.9 \pm 4.1$	$10^9 A_s e^{-2\tau}$	$1.881 \pm 0.012$	$\sigma_8(0.57)$	$0.745^{+0.088}_{-0.044}$
$A_{217}^{\text{dust}TT}$	$81.7 \pm 7.4$	$D_{40}$	$1236 \pm 13$	$f_{2000}^{143}$	$29.2 \pm 2.7$
$A_{100}^{\text{dust}EE}$	$0.0813 \pm 0.0057$	$D_{220}$	$5732 \pm 38$	$f_{2000}^{143 \times 217}$	$32.0 \pm 1.9$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0489 \pm 0.0050$	$D_{810}$	$2534 \pm 13$	$f_{2000}^{217}$	$105.6 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0997 \pm 0.033$	$D_{1420}$	$814.3 \pm 4.7$	$\chi_{\text{lowTEB}}^2$	$10496.5 \pm 1.9$
$A_{143}^{\text{dust}EE}$	$0.1004 \pm 0.0068$	$D_{2000}$	$230.5 \pm 1.6$	$\chi_{\text{plik}}^2$	$2449.2 \pm 6.6$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.046$	$n_{s,0.002}$	$0.9650 \pm 0.0048$	$\chi_{\text{prior}}^2$	$19.3 \pm 5.5$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$Y_P$	$0.245356 \pm 0.000072$	$\chi_{\text{CMB}}^2$	$12945.7 \pm 6.7$
$A_{100}^{\text{dust}TE}$	$0.140 \pm 0.038$	$Y_P^{\text{BBN}}$	$0.246682 \pm 0.000072$		
$A_{100 \times 143}^{\text{dust}TE}$	$0.131 \pm 0.029$	$10^5 \text{D/H}$	$2.607 \pm 0.030$		

$$\bar{\chi}_{\text{eff}}^2 = 12964.96; \Delta\bar{\chi}_{\text{eff}}^2 = -2.72; R - 1 = 0.01324$$



## 21.10 base\_w\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022289	$0.02225 \pm 0.00022$	$\Omega_m h^2$	0.14207	$0.1422 \pm 0.0018$	$r_{\text{drag}}$	147.409	$147.40 \pm 0.44$
$\Omega_c h^2$	0.11914	$0.1193 \pm 0.0019$	$\Omega_m h^3$	0.09659	$0.0968^{+0.0029}_{-0.0035}$	$k_D$	0.140469	$0.14045 \pm 0.00050$
$100\theta_{\text{MC}}$	1.040947	$1.04093 \pm 0.00046$	$\sigma_8$	0.8347	$0.835 \pm 0.026$	$100\theta_D$	0.160902	$0.16095 \pm 0.00026$
$\tau$	0.0820	$0.079 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4628	$0.462 \pm 0.010$	$z_{\text{eq}}$	3379.6	$3383 \pm 43$
$w$	-1.013	$-1.021^{+0.083}_{-0.066}$	$\sigma_8 \Omega_m^{0.25}$	0.6215	$0.621 \pm 0.015$	$k_{\text{eq}}$	0.010315	$0.01033 \pm 0.00013$
$\ln(10^{10} A_s)$	3.0967	$3.092 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0124	$1.012 \pm 0.023$	$100\theta_{\text{eq}}$	0.8171	$0.8165 \pm 0.0080$
$n_s$	0.9677	$0.9666 \pm 0.0056$	$\langle d^2 \rangle^{1/2}$	2.4984	$2.498 \pm 0.048$	$100\theta_{s,\text{eq}}$	0.45145	$0.4511 \pm 0.0041$
$y_{\text{cal}}$	1.00024	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.32	$10.0^{+1.9}_{-1.6}$	$r_{\text{drag}}/D_V(0.57)$	0.071716	$0.07167 \pm 0.00043$
$A_{217}^{\text{CIB}}$	65.3	$63.7 \pm 6.7$	$10^9 A_s$	2.213	$2.204 \pm 0.082$	$H(0.57)$	92.987	$92.89^{+0.50}_{-0.40}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.22	—	$10^9 A_s e^{-2\tau}$	1.8777	$1.879 \pm 0.013$	$D_A(0.57)$	1384.6	$1385 \pm 12$
$A_{143}^{\text{tSZ}}$	6.97	$5.2 \pm 1.9$	$D_{40}$	1233.2	$1236 \pm 14$	$F_{\text{AP}}(0.57)$	0.6743	$0.6739^{+0.0079}_{-0.0068}$
$A_{100}^{\text{PS}}$	250.5	$258 \pm 28$	$D_{220}$	5717.6	$5720 \pm 41$	$f\sigma_8(0.57)$	0.4856	$0.487^{+0.018}_{-0.021}$
$A_{143}^{\text{PS}}$	41.8	$43 \pm 8$	$D_{810}$	2534.1	$2534 \pm 14$	$\sigma_8(0.57)$	0.6215	$0.621 \pm 0.019$
$A_{143 \times 217}^{\text{PS}}$	38.9	$39^{+10}_{-10}$	$D_{1420}$	815.3	$814.8 \pm 5.1$	$f_{2000}^{143}$	29.05	$29.8 \pm 2.9$
$A_{217}^{\text{PS}}$	100.2	$97 \pm 10$	$D_{2000}$	230.77	$230.5 \pm 1.8$	$f_{2000}^{143 \times 217}$	31.95	$32.3 \pm 2.1$
$A^{\text{kSZ}}$	0.01	$< 4.49$	$n_{s,0.002}$	0.9677	$0.9666 \pm 0.0056$	$f_{2000}^{217}$	105.53	$105.9 \pm 2.0$
$A_{100}^{\text{dustTT}}$	7.42	$7.4 \pm 1.9$	$Y_{\text{P}}$	0.245357	$0.245339 \pm 0.000099$	$\chi_{\text{lowTEB}}^2$	10496.48	$10497.3 \pm 2.4$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	$Y_{\text{P}}^{\text{BBN}}$	0.246684	$0.246665 \pm 0.000099$	$\chi_{\text{plik}}^2$	763.6	$777.0 \pm 5.6$
$A_{143 \times 217}^{\text{dustTT}}$	17.78	$17.1 \pm 4.1$	$10^5 D/H$	2.6066	$2.614 \pm 0.041$	$\chi_{6\text{DF}}^2$	0.005	$0.16 \pm 0.22$
$A_{217}^{\text{dustTT}}$	82.2	$81.8 \pm 7.4$	Age/Gyr	13.7931	$13.796 \pm 0.038$	$\chi_{\text{MGS}}^2$	1.47	$1.7 \pm 1.0$
$c_{100}$	0.99792	$0.99789 \pm 0.00077$	$z_*$	1089.946	$1090.01 \pm 0.38$	$\chi_{\text{DR11CMass}}^2$	2.54	$3.19 \pm 0.99$
$c_{217}$	0.99589	$0.9959 \pm 0.0015$	$r_*$	144.716	$144.70 \pm 0.43$	$\chi_{\text{DR11LOWZ}}^2$	0.476	$0.74 \pm 0.75$
$H_0$	67.99	$68.1^{+1.5}_{-1.9}$	$100\theta_*$	1.041142	$1.04113 \pm 0.00045$	$\chi_{\text{prior}}^2$	1.88	$7.3 \pm 3.5$
$\Omega_\Lambda$	0.6926	$0.693 \pm 0.014$	$D_A/\text{Gpc}$	13.8998	$13.898 \pm 0.040$	$\chi_{\text{CMB}}^2$	11260.0	$11274.4 \pm 5.5$
$\Omega_m$	0.3074	$0.307 \pm 0.014$	$z_{\text{drag}}$	1059.704	$1059.62 \pm 0.46$	$\chi_{\text{BAO}}^2$	4.49	$5.7 \pm 1.7$

Best-fit  $\chi_{\text{eff}}^2 = 11266.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 11287.43$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.06$ ;  $R - 1 = 0.00570$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.19) DR11CMass: 2.54 ( $\Delta$  0.09) DR11LOWZ: 0.48 ( $\Delta$  -0.14) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10496.49 ( $\Delta$  0.06) plik.dx11dr2\_HM.v18.TT: 763.55 ( $\Delta$  -0.04)

## 21.11 base\_w\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02226 \pm 0.00022$	$\Omega_m h^3$	0.09517	$0.0953 \pm 0.0028$	$100\theta_D$	0.160966	$0.16099 \pm 0.00027$
$\Omega_c h^2$	0.11817	$0.1184 \pm 0.0017$	$\sigma_8$	0.8110	$0.812 \pm 0.018$	$z_{\text{eq}}$	3356.2	$3360 \pm 38$
$100\theta_{\text{MC}}$	1.041075	$1.04106 \pm 0.00044$	$\sigma_8 \Omega_m^{0.5}$	0.4516	$0.4523 \pm 0.0066$	$k_{\text{eq}}$	0.010244	$0.01026 \pm 0.00012$
$\tau$	0.0687	$0.068 \pm 0.017$	$\sigma_8 \Omega_m^{0.25}$	0.6052	$0.6059 \pm 0.0093$	$100\theta_{\text{eq}}$	0.8215	$0.8207 \pm 0.0074$
$w$	-0.983	$-0.988^{+0.071}_{-0.062}$	$\sigma_8/h^{0.5}$	0.9874	$0.988 \pm 0.014$	$100\theta_{s,\text{eq}}$	0.45372	$0.4533 \pm 0.0038$
$\ln(10^{10} A_s)$	3.0669	$3.066 \pm 0.031$	$\langle d^2 \rangle^{1/2}$	2.4438	$2.447 \pm 0.027$	$r_{\text{drag}}/D_V(0.57)$	0.071796	$0.07173 \pm 0.00043$
$n_s$	0.9690	$0.9681 \pm 0.0054$	$z_{\text{re}}$	9.09	$8.9^{+1.7}_{-1.5}$	$H(0.57)$	93.139	$93.07^{+0.44}_{-0.37}$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0025$	$10^9 A_s$	2.148	$2.147^{+0.063}_{-0.072}$	$D_A(0.57)$	1387.2	$1388 \pm 12$
$A_{217}^{\text{CIB}}$	67.4	$64.5 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8718	$1.873 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.6766	$0.6766 \pm 0.0068$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1223.5	$1227 \pm 12$	$f\sigma_8(0.57)$	0.4694	$0.471 \pm 0.014$
$A_{143}^{\text{tSZ}}$	7.26	$5.0 \pm 1.9$	$D_{220}$	5714.9	$5718 \pm 42$	$\sigma_8(0.57)$	0.6043	$0.605 \pm 0.014$
$A_{100}^{\text{PS}}$	252.7	$260 \pm 28$	$D_{810}$	2531.7	$2532 \pm 14$	$f_{2000}^{143}$	29.92	$30.5 \pm 2.8$
$A_{143}^{\text{PS}}$	39.0	$44 \pm 8$	$D_{1420}$	814.9	$814.7 \pm 5.1$	$f_{2000}^{143 \times 217}$	32.51	$32.8 \pm 2.0$
$A_{143 \times 217}^{\text{PS}}$	32.6	$38^{+10}_{-10}$	$D_{2000}$	230.21	$230.1 \pm 1.8$	$f_{2000}^{217}$	106.06	$106.3 \pm 2.0$
$A_{217}^{\text{PS}}$	97.0	$96 \pm 10$	$n_{s,0.002}$	0.9690	$0.9681 \pm 0.0054$	$\chi_{\text{lensing}}^2$	9.06	$9.9 \pm 1.5$
$A^{\text{kSZ}}$	0.01	$< 5.06$	$Y_{\text{P}}$	0.245353	$0.24534 \pm 0.00010$	$\chi_{\text{lowTEB}}^2$	10494.85	$10495.7 \pm 1.3$
$A_{100}^{\text{dustTT}}$	7.40	$7.4 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.246679	$0.24667 \pm 0.00010$	$\chi_{\text{plik}}^2$	766.5	$779.6 \pm 5.5$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	$10^5 D/H$	2.6084	$2.613 \pm 0.042$	$\chi_{6\text{DF}}^2$	0.024	$0.17 \pm 0.22$
$A_{143 \times 217}^{\text{dustTT}}$	17.76	$17.1 \pm 4.1$	$\text{Age/Gyr}$	13.8054	$13.809 \pm 0.037$	$\chi_{\text{MGS}}^2$	1.28	$1.42 \pm 0.96$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$z_*$	1089.872	$1089.92 \pm 0.38$	$\chi_{\text{DR11CMass}}^2$	2.24	$2.87 \pm 0.93$
$c_{100}$	0.99789	$0.99787 \pm 0.00079$	$r_*$	144.976	$144.94 \pm 0.39$	$\chi_{\text{DR11LOWZ}}^2$	0.53	$0.83 \pm 0.81$
$c_{217}$	0.99597	$0.9960 \pm 0.0015$	$100\theta_*$	1.041266	$1.04126 \pm 0.00043$	$\chi_{\text{prior}}^2$	2.16	$7.4 \pm 3.6$
$H_0$	67.46	$67.5^{+1.4}_{-1.7}$	$D_A/\text{Gpc}$	13.9231	$13.920 \pm 0.036$	$\chi_{\text{CMB}}^2$	11270.4	$11285.1 \pm 5.5$
$\Omega_\Lambda$	0.6899	$0.689 \pm 0.013$	$z_{\text{drag}}$	1059.589	$1059.55 \pm 0.47$	$\chi_{\text{BAO}}^2$	4.07	$5.3 \pm 1.6$
$\Omega_m$	0.3101	$0.311 \pm 0.013$	$r_{\text{drag}}$	147.680	$147.65 \pm 0.39$			
$\Omega_m h^2$	0.14109	$0.1413 \pm 0.0016$	$k_D$	0.140178	$0.14019 \pm 0.00045$			

Best-fit  $\chi_{\text{eff}}^2 = 11276.64$ ;  $\Delta\chi_{\text{eff}}^2 = -0.10$ ;  $\bar{\chi}_{\text{eff}}^2 = 11297.85$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.02226$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.02 ( $\Delta$  0.01) MGS: 1.28 ( $\Delta$  -0.13) DR11CMass: 2.24 ( $\Delta$  -0.16) DR11LOWZ: 0.53 ( $\Delta$  0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.05 ( $\Delta$  -0.19) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.85 ( $\Delta$  -0.01) plik\_dx11dr2\_HM\_v18\_TT: 766.50 ( $\Delta$  0.30)

## 21.12 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022300	$0.02227 \pm 0.00016$	$A_{143}^{\text{dust}TE}$	0.156	$0.155 \pm 0.054$	$r_*$	144.628	$144.60 \pm 0.30$
$\Omega_c h^2$	0.11944	$0.1196 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.338 \pm 0.081$	$100\theta_*$	1.041000	$1.04100 \pm 0.00031$
$100\theta_{\text{MC}}$	1.040816	$1.04081 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.662	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8932	$13.891 \pm 0.028$
$\tau$	0.0829	$0.080 \pm 0.017$	$c_{100}$	0.99825	$0.99817 \pm 0.00078$	$z_{\text{drag}}$	1059.742	$1059.68 \pm 0.31$
$w$	-1.021	$-1.030^{+0.069}_{-0.059}$	$c_{217}$	0.99583	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	147.316	$147.30 \pm 0.29$
$\ln(10^{10} A_s)$	3.1004	$3.094 \pm 0.033$	$H_0$	68.07	$68.3^{+1.5}_{-1.7}$	$k_D$	0.140577	$0.14057 \pm 0.00032$
$n_s$	0.96624	$0.9650 \pm 0.0046$	$\Omega_\Lambda$	0.6927	$0.694 \pm 0.013$	$100\theta_D$	0.160854	$0.16089 \pm 0.00018$
$y_{\text{cal}}$	1.00040	$1.0004 \pm 0.0025$	$\Omega_m$	0.3073	$0.306 \pm 0.013$	$z_{\text{eq}}$	3387.3	$3391 \pm 30$
$A_{217}^{\text{CIB}}$	64.0	$63.9 \pm 6.6$	$\Omega_m h^2$	0.14239	$0.1425 \pm 0.0013$	$k_{\text{eq}}$	0.010338	$0.010349 \pm 0.000093$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.36	—	$\Omega_m h^3$	0.09693	$0.0973^{+0.0025}_{-0.0029}$	$100\theta_{\text{eq}}$	0.8157	$0.8150 \pm 0.0058$
$A_{143}^{\text{tSZ}}$	6.99	$5.4 \pm 1.9$	$\sigma_8$	0.8390	$0.839 \pm 0.022$	$100\theta_{\text{s,eq}}$	0.45068	$0.4503 \pm 0.0030$
$A_{100}^{\text{PS}}$	252.3	$260 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.4641 \pm 0.0087$	$r_{\text{drag}}/D_V(0.57)$	0.071651	$0.07164 \pm 0.00040$
$A_{143}^{\text{PS}}$	43.5	$43 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6246	$0.624 \pm 0.012$	$H(0.57)$	92.919	$92.84^{+0.37}_{-0.31}$
$A_{143 \times 217}^{\text{PS}}$	43.1	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0169	$1.016 \pm 0.019$	$D_A(0.57)$	1384.7	$1384 \pm 11$
$A_{217}^{\text{PS}}$	102.4	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5106	$2.508 \pm 0.042$	$F_{\text{AP}}(0.57)$	0.6738	$0.6731 \pm 0.0066$
$A^{\text{kSZ}}$	0.00	$< 4.05$	$z_{\text{re}}$	10.40	$10.1^{+1.7}_{-1.4}$	$f\sigma_8(0.57)$	0.4889	$0.490 \pm 0.016$
$A_{100}^{\text{dust}TT}$	7.45	$7.4 \pm 1.9$	$10^9 A_s$	2.221	$2.207 \pm 0.074$	$\sigma_8(0.57)$	0.6244	$0.624 \pm 0.017$
$A_{143}^{\text{dust}TT}$	8.94	$8.9 \pm 1.8$	$10^9 A_s e^{-2\tau}$	1.8813	$1.881 \pm 0.012$	$f_{2000}^{143}$	28.63	$29.4 \pm 2.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.88	$17.0 \pm 4.1$	$D_{40}$	1238.6	$1240 \pm 13$	$f_{2000}^{143 \times 217}$	31.79	$32.1 \pm 1.9$
$A_{217}^{\text{dust}TT}$	82.5	$81.6 \pm 7.4$	$D_{220}$	5729.6	$5729 \pm 39$	$f_{2000}^{217}$	105.35	$105.7 \pm 1.9$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0811 \pm 0.0057$	$D_{810}$	2536.5	$2535 \pm 13$	$\chi_{\text{lowTEB}}^2$	10497.05	$10497.6 \pm 2.2$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0487 \pm 0.0050$	$D_{1420}$	815.67	$814.7 \pm 4.7$	$\chi_{\text{plik}}^2$	2431.7	$2450.5 \pm 6.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1004	$0.0998 \pm 0.033$	$D_{2000}$	230.90	$230.5 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.005	$0.15 \pm 0.22$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1002 \pm 0.0069$	$n_{\text{s},0.002}$	0.96624	$0.9650 \pm 0.0046$	$\chi_{\text{MGS}}^2$	1.47	$1.7 \pm 1.0$
$A_{143 \times 217}^{\text{dust}EE}$	0.2243	$0.224 \pm 0.047$	$Y_{\text{P}}$	0.245362	$0.245348 \pm 0.000071$	$\chi_{\text{DR11CMass}}^2$	2.65	$3.26 \pm 0.89$
$A_{217}^{\text{dust}EE}$	0.651	$0.65 \pm 0.13$	$Y_{\text{P}}^{\text{BBN}}$	0.246689	$0.246674 \pm 0.000071$	$\chi_{\text{DR11LOWZ}}^2$	0.513	$0.72 \pm 0.76$
$A_{100}^{\text{dust}TE}$	0.1404	$0.140 \pm 0.038$	$10^5 D/H$	2.6045	$2.610 \pm 0.029$	$\chi_{\text{prior}}^2$	6.6	$19.3 \pm 5.5$
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.132 \pm 0.029$	Age/Gyr	13.7927	$13.793 \pm 0.033$	$\chi_{\text{CMB}}^2$	12928.8	$12948.2 \pm 6.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.302 \pm 0.084$	$z_*$	1089.961	$1090.01 \pm 0.28$	$\chi_{\text{BAO}}^2$	4.64	$5.8 \pm 1.7$

Best-fit  $\chi_{\text{eff}}^2 = 12940.03$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 12973.27$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.80$ ;  $R - 1 = 0.01035$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.02) MGS: 1.47 ( $\Delta$  0.26) DR11CMass: 2.65 ( $\Delta$  0.15) DR11LOWZ: 0.51 ( $\Delta$  -0.17) CMB - lowl.SMW\_70.dx11d.2014.10.03.v5c\_Ap: 10497.05 ( $\Delta$  -0.37) plik.dx11dr2\_HM.v18.TTTEEE: 2431.71 ( $\Delta$  0.17)

### 21.13 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022286	$0.02228 \pm 0.00015$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.337 \pm 0.080$	$D_A/\text{Gpc}$	13.9067	$13.904^{+0.029}_{-0.026}$
$\Omega_c h^2$	0.11889	$0.1190 \pm 0.0013$	$A_{217}^{\text{dust}TE}$	1.667	$1.66 \pm 0.26$	$z_{\text{drag}}$	1059.666	$1059.66 \pm 0.31$
$100\theta_{\text{MC}}$	1.040917	$1.04089 \pm 0.00032$	$c_{100}$	0.99818	$0.99814 \pm 0.00079$	$r_{\text{drag}}$	147.479	$147.45 \pm 0.28$
$\tau$	0.0653	$0.064 \pm 0.014$	$c_{217}$	0.99611	$0.9960 \pm 0.0014$	$k_D$	0.140393	$0.14042 \pm 0.00030$
$w$	-0.999	$-1.007^{+0.063}_{-0.056}$	$H_0$	67.64	$67.8^{+1.4}_{-1.6}$	$100\theta_D$	0.160909	$0.16091 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0628	$3.060 \pm 0.026$	$\Omega_\Lambda$	0.6900	$0.691 \pm 0.013$	$z_{\text{eq}}$	3373.6	$3377 \pm 30$
$n_s$	0.96651	$0.9660 \pm 0.0046$	$\Omega_m$	0.3100	$0.309 \pm 0.013$	$k_{\text{eq}}$	0.010297	$0.010306 \pm 0.000090$
$y_{\text{cal}}$	1.00021	$1.0001 \pm 0.0026$	$\Omega_m h^2$	0.14182	$0.1419 \pm 0.0012$	$100\theta_{\text{eq}}$	0.8182	$0.8177 \pm 0.0057$
$A_{217}^{\text{CIB}}$	68.1	$64.7^{+6.1}_{-7.1}$	$\Omega_m h^3$	0.09593	$0.0963^{+0.0024}_{-0.0027}$	$100\theta_{s,\text{eq}}$	0.45200	$0.4517 \pm 0.0029$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$\sigma_8$	0.8155	$0.816 \pm 0.016$	$r_{\text{drag}}/D_V(0.57)$	0.071670	$0.07166 \pm 0.00041$
$A_{143}^{\text{tSZ}}$	7.29	$5.3 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4540	$0.4537 \pm 0.0062$	$H(0.57)$	93.017	$92.97^{+0.34}_{-0.30}$
$A_{100}^{\text{PS}}$	258.8	$262 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6085	$0.6085 \pm 0.0082$	$D_A(0.57)$	1387.1	$1387 \pm 11$
$A_{143}^{\text{PS}}$	38.8	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9915	$0.991 \pm 0.012$	$F_{\text{AP}}(0.57)$	0.6757	$0.6751 \pm 0.0064$
$A_{143 \times 217}^{\text{PS}}$	32.6	$39^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4541	$2.453 \pm 0.026$	$f\sigma_8(0.57)$	0.4736	$0.475^{+0.011}_{-0.014}$
$A_{217}^{\text{PS}}$	96.2	$96 \pm 10$	$z_{\text{re}}$	8.77	$8.6^{+1.5}_{-1.3}$	$\sigma_8(0.57)$	0.6071	$0.608 \pm 0.013$
$A^{\text{kSZ}}$	0.00	$< 4.72$	$10^9 A_s$	2.139	$2.133 \pm 0.056$	$f_{2000}^{143}$	29.87	$30.2 \pm 2.7$
$A_{100}^{\text{dust}TT}$	7.50	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8767	$1.877 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.60	$32.7 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.07	$9.1 \pm 1.8$	$D_{40}$	1229.5	$1230 \pm 11$	$f_{2000}^{217}$	106.13	$106.1 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.69	$17.2 \pm 4.1$	$D_{220}$	5726.3	$5725 \pm 39$	$\chi^2_{\text{lensing}}$	9.69	$10.3 \pm 1.8$
$A_{217}^{\text{dust}TT}$	81.9	$81.5 \pm 7.4$	$D_{810}$	2534.2	$2533 \pm 14$	$\chi^2_{\text{lowTEB}}$	10495.24	$10495.8 \pm 1.1$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0813^{+0.0055}_{-0.0062}$	$D_{1420}$	815.06	$814.6 \pm 4.8$	$\chi^2_{\text{plik}}$	2435.2	$2453.9 \pm 6.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0491 \pm 0.0050$	$D_{2000}$	230.21	$230.0 \pm 1.6$	$\chi^2_{6\text{DF}}$	0.022	$0.15 \pm 0.23$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.101 \pm 0.033$	$n_{s,0.002}$	0.96651	$0.9660 \pm 0.0046$	$\chi^2_{\text{MGS}}$	1.28	$1.51 \pm 0.95$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1003 \pm 0.0069$	$Y_P$	0.245356	$0.245353 \pm 0.000070$	$\chi^2_{\text{DR11CMass}}$	2.44	$3.04 \pm 0.91$
$A_{143 \times 217}^{\text{dust}EE}$	0.2242	$0.223 \pm 0.048$	$Y_P^{\text{BBN}}$	0.246682	$0.246679 \pm 0.000070$	$\chi^2_{\text{DR11LOWZ}}$	0.604	$0.81 \pm 0.82$
$A_{217}^{\text{dust}EE}$	0.649	$0.65 \pm 0.13$	$10^5 D/H$	2.6072	$2.608 \pm 0.029$	$\chi^2_{\text{prior}}$	7.1	$19.6 \pm 5.4$
$A_{100}^{\text{dust}TE}$	0.1403	$0.140 \pm 0.037$	$\text{Age/Gyr}$	13.8022	$13.801^{+0.031}_{-0.035}$	$\chi^2_{\text{CMB}}$	12940.2	$12960.0 \pm 6.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1304	$0.131 \pm 0.029$	$z_*$	1089.928	$1089.94 \pm 0.28$	$\chi^2_{\text{BAO}}$	4.34	$5.5 \pm 1.7$
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.301 \pm 0.085$	$r_*$	144.783	$144.75 \pm 0.29$			
$A_{143}^{\text{dust}TE}$	0.155	$0.157^{+0.054}_{-0.061}$	$100\theta_*$	1.041107	$1.04109 \pm 0.00031$			

Best-fit  $\chi^2_{\text{eff}} = 12951.59$ ;  $\Delta\chi^2_{\text{eff}} = 0.01$ ;  $\bar{\chi}^2_{\text{eff}} = 12985.07$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 1.43$ ;  $R - 1 = 0.03760$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.02 ( $\Delta$  0.00) MGS: 1.28 ( $\Delta$  0.00) DR11CMass: 2.44 ( $\Delta$  -0.02) DR11LOWZ: 0.60 ( $\Delta$  -0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.69 ( $\Delta$  0.02) lowl\_SMW\_70\_dx11d\_2014.10.03

10495.24 ( $\Delta$  0.03) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.25 ( $\Delta$  -0.05)

## 21.14 base\_w\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022271	$0.02226 \pm 0.00021$	$\Omega_m h^2$	0.14205	$0.1422 \pm 0.0016$	$100\theta_D$	0.160927	$0.16093 \pm 0.00026$
$\Omega_c h^2$	0.11914	$0.1193 \pm 0.0017$	$\Omega_m h^3$	0.09697	$0.0970 \pm 0.0021$	$z_{\text{eq}}$	3379.2	$3383 \pm 39$
$100\theta_{\text{MC}}$	1.040946	$1.04093 \pm 0.00044$	$\sigma_8$	0.8363	$0.836 \pm 0.020$	$k_{\text{eq}}$	0.010314	$0.01033 \pm 0.00012$
$\tau$	0.0805	$0.080 \pm 0.018$	$\sigma_8 \Omega_m^{0.5}$	0.4617	$0.462 \pm 0.010$	$100\theta_{\text{eq}}$	0.8172	$0.8165 \pm 0.0073$
$w$	-1.0226	$-1.023^{+0.051}_{-0.046}$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.622 \pm 0.014$	$100\theta_{\text{s,eq}}$	0.45148	$0.4512 \pm 0.0038$
$\ln(10^{10} A_s)$	3.0936	$3.092 \pm 0.036$	$\sigma_8/h^{0.5}$	1.0122	$1.012 \pm 0.021$	$r_{\text{drag}}/D_V(0.57)$	0.071792	$0.07172 \pm 0.00042$
$n_s$	0.9674	$0.9665 \pm 0.0052$	$\langle d^2 \rangle^{1/2}$	2.4968	$2.498 \pm 0.046$	$H(0.57)$	92.960	$92.92 \pm 0.39$
$y_{\text{cal}}$	1.00028	$1.0004 \pm 0.0025$	$z_{\text{re}}$	10.19	$10.0^{+1.8}_{-1.6}$	$D_A(0.57)$	1382.5	$1383.8 \pm 8.7$
$\alpha_{JLA}$	0.1415	$0.1415 \pm 0.0066$	$10^9 A_s$	2.206	$2.204 \pm 0.079$	$F_{\text{AP}}(0.57)$	0.67306	$0.6734 \pm 0.0045$
$\beta_{JLA}$	3.103	$3.107 \pm 0.081$	$10^9 A_s e^{-2\tau}$	1.8775	$1.878 \pm 0.013$	$f\sigma_8(0.57)$	0.4869	$0.487 \pm 0.015$
$A_{217}^{\text{CIB}}$	66.5	$63.8 \pm 6.6$	$D_{40}$	1232.8	$1236 \pm 14$	$\sigma_8(0.57)$	0.6229	$0.622 \pm 0.015$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$D_{220}$	5716.8	$5720 \pm 41$	$f_{2000}^{143}$	29.35	$29.8 \pm 2.8$
$A_{143}^{\text{tSZ}}$	7.12	$5.1 \pm 1.9$	$D_{810}$	2533.7	$2534 \pm 14$	$f_{2000}^{143 \times 217}$	31.99	$32.3 \pm 2.0$
$A_{100}^{\text{PS}}$	251.7	$258 \pm 28$	$D_{1420}$	815.02	$814.7 \pm 5.0$	$f_{2000}^{217}$	105.65	$105.9 \pm 2.0$
$A_{143}^{\text{PS}}$	38.8	$43 \pm 8$	$D_{2000}$	230.61	$230.5 \pm 1.8$	$\chi_{\text{lowTEB}}^2$	10496.30	$10497.3 \pm 2.4$
$A_{143 \times 217}^{\text{PS}}$	33.1	$39^{+10}_{-10}$	$n_{\text{s},0.002}$	0.9674	$0.9665 \pm 0.0052$	$\chi_{\text{plik}}^2$	763.5	$776.8 \pm 5.6$
$A_{217}^{\text{PS}}$	97.9	$97 \pm 10$	$Y_{\text{P}}$	0.245349	$0.245343 \pm 0.000096$	$\chi_{\text{H070p6}}^2$	0.509	$0.63 \pm 0.45$
$A^{\text{kSZ}}$	0.01	$< 4.54$	$Y_{\text{P}}^{\text{BBN}}$	0.246676	$0.246670 \pm 0.000097$	$\chi_{\text{JLA}}^2$	695.20	$697.8 \pm 2.2$
$A_{100}^{\text{dustTT}}$	7.38	$7.4 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.6100	$2.612 \pm 0.040$	$\chi_{\text{6DF}}^2$	0.0000	$0.070 \pm 0.099$
$A_{143}^{\text{dustTT}}$	9.00	$9.0 \pm 1.8$	$\text{Age}/\text{Gyr}$	13.7890	$13.792 \pm 0.031$	$\chi_{\text{MGS}}^2$	1.68	$1.68 \pm 0.72$
$A_{143 \times 217}^{\text{dustTT}}$	17.28	$17.0 \pm 4.2$	$z_*$	1089.969	$1090.00 \pm 0.36$	$\chi_{\text{DR11CMass}}^2$	2.62	$3.08 \pm 0.78$
$A_{217}^{\text{dustTT}}$	81.5	$81.7 \pm 7.4$	$r_*$	144.730	$144.70 \pm 0.40$	$\chi_{\text{DR11LOWZ}}^2$	0.350	$0.57 \pm 0.54$
$c_{100}$	0.99788	$0.99789 \pm 0.00078$	$100\theta_*$	1.041142	$1.04113 \pm 0.00043$	$\chi_{\text{prior}}^2$	2.06	$7.3 \pm 3.6$
$c_{217}$	0.99583	$0.9959 \pm 0.0014$	$D_A/\text{Gpc}$	13.9011	$13.898 \pm 0.037$	$\chi_{\text{CMB}}^2$	11259.8	$11274.1 \pm 5.4$
$H_0$	68.26	$68.2 \pm 1.1$	$z_{\text{drag}}$	1059.628	$1059.64 \pm 0.45$	$\chi_{\text{BAO}}^2$	4.65	$5.4 \pm 1.2$
$\Omega_\Lambda$	0.6952	$0.6940 \pm 0.0092$	$r_{\text{drag}}$	147.432	$147.40 \pm 0.41$			
$\Omega_m$	0.3048	$0.3060 \pm 0.0092$	$k_D$	0.140434	$0.14046 \pm 0.00047$			

Best-fit  $\chi_{\text{eff}}^2 = 11962.18$ ;  $\bar{\chi}_{\text{eff}}^2 = 11985.16$ ;  $R - 1 = 0.00509$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 MGS: 1.68 DR11CMass: 2.62 DR11LOWZ: 0.35 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.30 plik\_dx11dr2\_HM\_v18\_TT: 763.46  
Hubble - H070p6: 0.51 SN - JLA December\_2013: 695.20

21.15 base\_w\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022285	$0.02226 \pm 0.00021$	$\Omega_m h^2$	0.14137	$0.1414 \pm 0.0015$	$100\theta_D$	0.160943	$0.16098 \pm 0.00026$
$\Omega_c h^2$	0.11844	$0.1185 \pm 0.0016$	$\Omega_m h^3$	0.09614	$0.0961 \pm 0.0020$	$z_{\text{eq}}$	3363.0	$3364 \pm 36$
$100\theta_{\text{MC}}$	1.041028	$1.04104^{+0.00046}_{-0.00041}$	$\sigma_8$	0.8169	$0.817 \pm 0.014$	$k_{\text{eq}}$	0.010264	$0.01027 \pm 0.00011$
$\tau$	0.0672	$0.066 \pm 0.015$	$\sigma_8 \Omega_m^{0.5}$	0.4517	$0.4518 \pm 0.0066$	$100\theta_{\text{eq}}$	0.8202	$0.8200 \pm 0.0069$
$w$	-1.0044	$-1.006 \pm 0.045$	$\sigma_8 \Omega_m^{0.25}$	0.6074	$0.6074 \pm 0.0083$	$100\theta_{\text{s,eq}}$	0.45306	$0.4530 \pm 0.0035$
$\ln(10^{10} A_s)$	3.0644	$3.063^{+0.027}_{-0.031}$	$\sigma_8/h^{0.5}$	0.9906	$0.990 \pm 0.012$	$r_{\text{drag}}/D_V(0.57)$	0.071881	$0.07185^{+0.00039}_{-0.00045}$
$n_s$	0.9684	$0.9677 \pm 0.0052$	$\langle d^2 \rangle^{1/2}$	2.4485	$2.449 \pm 0.026$	$H(0.57)$	93.086	$93.05 \pm 0.37$
$y_{\text{cal}}$	0.99999	$1.0001 \pm 0.0025$	$z_{\text{re}}$	8.94	$8.8 \pm 1.4$	$D_A(0.57)$	1383.2	$1384.0 \pm 8.8$
$\alpha_{JLA}$	0.1414	$0.1412 \pm 0.0065$	$10^9 A_s$	2.142	$2.140^{+0.056}_{-0.067}$	$F_{\text{AP}}(0.57)$	0.67431	$0.6744 \pm 0.0044$
$\beta_{JLA}$	3.099	$3.105 \pm 0.082$	$10^9 A_s e^{-2\tau}$	1.8729	$1.874 \pm 0.012$	$f\sigma_8(0.57)$	0.4739	$0.474 \pm 0.010$
$A_{217}^{\text{CIB}}$	67.5	$64.5^{+6.4}_{-7.2}$	$D_{40}$	1224.1	$1226 \pm 12$	$\sigma_8(0.57)$	0.6089	$0.609 \pm 0.010$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$D_{220}$	5715.2	$5717 \pm 41$	$f_{2000}^{143}$	29.92	$30.4^{+3.0}_{-2.7}$
$A_{143}^{\text{tSZ}}$	7.11	$5.1 \pm 2.0$	$D_{810}$	2531.8	$2532 \pm 14$	$f_{2000}^{143 \times 217}$	32.53	$32.8 \pm 2.0$
$A_{100}^{\text{PS}}$	254.6	$260 \pm 28$	$D_{1420}$	814.9	$814.5 \pm 5.1$	$f_{2000}^{217}$	106.04	$106.3 \pm 1.9$
$A_{143}^{\text{PS}}$	39.4	$44 \pm 8$	$D_{2000}$	230.22	$230.0 \pm 1.8$	$\chi^2_{\text{lensing}}$	9.25	$9.9 \pm 1.6$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$n_{\text{s},0.002}$	0.9684	$0.9677 \pm 0.0052$	$\chi^2_{\text{lowTEB}}$	10494.85	$10495.5 \pm 1.2$
$A_{217}^{\text{PS}}$	97.0	$96 \pm 10$	$Y_{\text{P}}$	0.245356	$0.245342 \pm 0.000096$	$\chi^2_{\text{plik}}$	766.3	$779.2 \pm 5.5$
$A^{\text{kSZ}}$	0.00	$< 4.97$	$Y_{\text{P}}^{\text{BBN}}$	0.246682	$0.246668 \pm 0.000096$	$\chi^2_{\text{H070p6}}$	0.616	$0.71 \pm 0.47$
$A_{100}^{\text{dustTT}}$	7.51	$7.4 \pm 1.9$	$10^5 \text{D}/\text{H}$	2.6073	$2.613 \pm 0.040$	$\chi^2_{\text{JLA}}$	695.17	$697.7 \pm 2.1$
$A_{143}^{\text{dustTT}}$	9.10	$9.1 \pm 1.8$	$\text{Age}/\text{Gyr}$	13.7933	$13.796 \pm 0.031$	$\chi^2_{6\text{DF}}$	0.0008	$0.072 \pm 0.099$
$A_{143 \times 217}^{\text{dustTT}}$	17.71	$17.2 \pm 4.2$	$z_*$	1089.889	$1089.93 \pm 0.35$	$\chi^2_{\text{MGS}}$	1.61	$1.68 \pm 0.73$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.3$	$r_*$	144.899	$144.90 \pm 0.37$	$\chi^2_{\text{DR11CMass}}$	2.46	$2.90 \pm 0.77$
$c_{100}$	0.99791	$0.99789 \pm 0.00079$	$100\theta_*$	1.041226	$1.04123^{+0.00046}_{-0.00040}$	$\chi^2_{\text{DR11LOWZ}}$	0.334	$0.51 \pm 0.50$
$c_{217}$	0.99601	$0.9960 \pm 0.0015$	$D_A/\text{Gpc}$	13.9162	$13.916 \pm 0.035$	$\chi^2_{\text{prior}}$	2.06	$7.4 \pm 3.6$
$H_0$	68.00	$68.0 \pm 1.0$	$z_{\text{drag}}$	1059.628	$1059.57 \pm 0.45$	$\chi^2_{\text{CMB}}$	11270.4	$11284.7 \pm 5.4$
$\Omega_\Lambda$	0.6943	$0.6938 \pm 0.0093$	$r_{\text{drag}}$	147.599	$147.61 \pm 0.38$	$\chi^2_{\text{BAO}}$	4.41	$5.2 \pm 1.2$
$\Omega_m$	0.3057	$0.3062 \pm 0.0093$	$k_D$	0.140267	$0.14023 \pm 0.00044$			

Best-fit  $\chi^2_{\text{eff}} = 11972.61$ ;  $\Delta\chi^2_{\text{eff}} = -11.45$ ;  $\bar{\chi}^2_{\text{eff}} = 11995.62$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -8.40$ ;  $R - 1 = 0.02377$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.46 ( $\Delta$  0.05) DR11LOWZ: 0.33 ( $\Delta$  -0.04) CMB - smica\_g30\_ftl\_full\_pp: 9.25 ( $\Delta$  -0.02) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.85 ( $\Delta$  -0.07) plik\_dx11dr2\_HM\_v18\_TT: 766.27 ( $\Delta$  0.14) Hubble - H070p6: 0.62 ( $\Delta$  -0.05) SN - JLA December\_2013: 695.17 ( $\Delta$  -11.46)

21.16 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022303	$0.02227 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.155	$0.155 \pm 0.054$	$D_A/\text{Gpc}$	13.8938	$13.893 \pm 0.027$
$\Omega_c h^2$	0.11940	$0.1195 \pm 0.0013$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.338 \pm 0.080$	$z_{\text{drag}}$	1059.742	$1059.68 \pm 0.30$
$100\theta_{\text{MC}}$	1.040826	$1.04081 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	1.658	$1.67 \pm 0.26$	$r_{\text{drag}}$	147.325	$147.32 \pm 0.28$
$\tau$	0.0836	$0.080 \pm 0.017$	$c_{100}$	0.99826	$0.99817 \pm 0.00078$	$k_D$	0.140569	$0.14055 \pm 0.00031$
$w$	-1.0228	$-1.030 \pm 0.041$	$c_{217}$	0.99584	$0.9960 \pm 0.0015$	$100\theta_D$	0.160856	$0.16089 \pm 0.00018$
$\ln(10^{10} A_s)$	3.1018	$3.094 \pm 0.033$	$H_0$	68.16	$68.3 \pm 1.0$	$z_{\text{eq}}$	3386.3	$3389 \pm 28$
$n_s$	0.96656	$0.9652 \pm 0.0044$	$\Omega_\Lambda$	0.6936	$0.6943 \pm 0.0090$	$k_{\text{eq}}$	0.010335	$0.010344 \pm 0.000087$
$y_{\text{cal}}$	1.00043	$1.0004 \pm 0.0024$	$\Omega_m$	0.3064	$0.3057 \pm 0.0090$	$100\theta_{\text{eq}}$	0.8159	$0.8153 \pm 0.0054$
$\alpha_{JLA}$	0.1413	$0.1415 \pm 0.0067$	$\Omega_m h^2$	0.14235	$0.1425 \pm 0.0012$	$100\theta_{s,\text{eq}}$	0.45079	$0.4505 \pm 0.0028$
$\beta_{JLA}$	3.103	$3.108 \pm 0.080$	$\Omega_m h^3$	0.09703	$0.0973 \pm 0.0018$	$r_{\text{drag}}/D_V(0.57)$	0.071686	$0.07168 \pm 0.00036$
$A_{217}^{\text{CIB}}$	63.9	$63.8 \pm 6.6$	$\sigma_8$	0.8402	$0.839 \pm 0.017$	$H(0.57)$	92.927	$92.87 \pm 0.29$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.41	—	$\sigma_8 \Omega_m^{0.5}$	0.4651	$0.4638 \pm 0.0086$	$D_A(0.57)$	1383.8	$1383.6 \pm 8.2$
$A_{143}^{\text{tSZ}}$	6.96	$5.4 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6251	$0.624 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67345	$0.6729 \pm 0.0042$
$A_{100}^{\text{PS}}$	252.6	$259 \pm 28$	$\sigma_8/h^{0.5}$	1.0176	$1.015 \pm 0.018$	$f\sigma_8(0.57)$	0.4896	$0.489 \pm 0.012$
$A_{143}^{\text{PS}}$	44.2	$43 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.5116	$2.507 \pm 0.040$	$\sigma_8(0.57)$	0.6254	$0.624 \pm 0.013$
$A_{143 \times 217}^{\text{PS}}$	44.4	$40 \pm 10$	$z_{\text{re}}$	10.46	$10.1_{-1.4}^{+1.7}$	$f_{2000}^{143}$	28.55	$29.4 \pm 2.7$
$A_{217}^{\text{PS}}$	102.5	$98 \pm 10$	$10^9 A_s$	2.224	$2.207 \pm 0.073$	$f_{2000}^{143 \times 217}$	31.74	$32.1 \pm 1.9$
$A^{\text{kSZ}}$	0.00	$< 4.04$	$10^9 A_s e^{-2\tau}$	1.8814	$1.881 \pm 0.011$	$f_{2000}^{217}$	105.23	$105.7 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.40	$7.4 \pm 1.9$	$D_{40}$	1238.3	$1240 \pm 13$	$\chi_{\text{lowTEB}}^2$	10497.06	$10497.6 \pm 2.2$
$A_{143}^{\text{dust}TT}$	8.97	$8.9 \pm 1.8$	$D_{220}$	5729.3	$5730 \pm 38$	$\chi_{\text{plik}}^2$	2431.7	$2450.3 \pm 6.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.98	$17.0 \pm 4.1$	$D_{810}$	2536.9	$2535 \pm 13$	$\chi_{\text{H070p6}}^2$	0.553	$0.59 \pm 0.41$
$A_{217}^{\text{dust}TT}$	82.5	$81.7 \pm 7.4$	$D_{1420}$	815.90	$814.8 \pm 4.7$	$\chi_{\text{JLA}}^2$	695.21	$697.7 \pm 2.2$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0812 \pm 0.0057$	$D_{2000}$	231.00	$230.5 \pm 1.6$	$\chi_{\text{6DF}}^2$	0.0018	$0.066 \pm 0.094$
$A_{100 \times 143}^{\text{dust}EE}$	0.04894	$0.0489 \pm 0.0050$	$n_{s,0.002}$	0.96656	$0.9652 \pm 0.0044$	$\chi_{\text{MGS}}^2$	1.54	$1.69 \pm 0.70$
$A_{100 \times 217}^{\text{dust}EE}$	0.0993	$0.100 \pm 0.032$	$Y_P$	0.245363	$0.245349_{-0.000064}^{+0.000072}$	$\chi_{\text{DR11CMass}}^2$	2.65	$3.07 \pm 0.61$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1002 \pm 0.0069$	$Y_P^{\text{BBN}}$	0.246690	$0.246675_{-0.000065}^{+0.000072}$	$\chi_{\text{DR11LOWZ}}^2$	0.461	$0.57 \pm 0.52$
$A_{143 \times 217}^{\text{dust}EE}$	0.2236	$0.224 \pm 0.047$	$10^5 D/H$	2.6041	$2.610 \pm 0.028$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$\text{Age/Gyr}$	13.7904	$13.791 \pm 0.025$	$\chi_{\text{CMB}}^2$	12928.8	$12947.9 \pm 6.6$
$A_{100}^{\text{dust}TE}$	0.1403	$0.141 \pm 0.038$	$z_*$	1089.954	$1090.00 \pm 0.26$	$\chi_{\text{BAO}}^2$	4.65	$5.4 \pm 1.0$
$A_{100 \times 143}^{\text{dust}TE}$	0.1317	$0.131 \pm 0.029$	$r_*$	144.638	$144.62 \pm 0.28$			
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.303 \pm 0.084$	$100\theta_*$	1.041020	$1.04100 \pm 0.00031$			

Best-fit  $\chi_{\text{eff}}^2 = 13635.80$ ;  $\bar{\chi}_{\text{eff}}^2 = 13670.82$ ;  $R - 1 = 0.00718$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.54 DR11CMass: 2.65 DR11LOWZ: 0.46 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10497.06 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.72 Hubble - H070p6: 0.55 SN - JLA December\_2013: 695.21



21.17 base\_w\_plikHM\_TTTEEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022285	$0.02227 \pm 0.00014$	$A_{143}^{\text{dust}TE}$	0.155	$0.154 \pm 0.053$	$D_A/\text{Gpc}$	13.9047	$13.903 \pm 0.025$
$\Omega_c h^2$	0.11899	$0.1191 \pm 0.0012$	$A_{143 \times 217}^{\text{dust}TE}$	0.337	$0.336 \pm 0.079$	$z_{\text{drag}}$	1059.666	$1059.63 \pm 0.30$
$100\theta_{\text{MC}}$	1.040868	$1.04088 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	1.668	$1.66 \pm 0.25$	$r_{\text{drag}}$	147.453	$147.44 \pm 0.27$
$\tau$	0.0640	$0.063 \pm 0.013$	$c_{100}$	0.99816	$0.99814 \pm 0.00079$	$k_D$	0.140421	$0.14042 \pm 0.00030$
$w$	-1.0173	$-1.019 \pm 0.039$	$c_{217}$	0.99610	$0.9961 \pm 0.0014$	$100\theta_D$	0.160901	$0.16092 \pm 0.00017$
$\ln(10^{10} A_s)$	3.0602	$3.058 \pm 0.024$	$H_0$	68.15	$68.1 \pm 1.0$	$z_{\text{eq}}$	3376.1	$3379 \pm 27$
$n_s$	0.96618	$0.9656 \pm 0.0043$	$\Omega_\Lambda$	0.6944	$0.6938 \pm 0.0090$	$k_{\text{eq}}$	0.010304	$0.010312 \pm 0.000083$
$y_{\text{cal}}$	1.00008	$1.0001 \pm 0.0025$	$\Omega_m$	0.3056	$0.3062 \pm 0.0090$	$100\theta_{\text{eq}}$	0.8177	$0.8172 \pm 0.0052$
$\alpha_{JLA}$	0.1414	$0.1415 \pm 0.0067$	$\Omega_m h^2$	0.14192	$0.1420 \pm 0.0011$	$100\theta_{s,\text{eq}}$	0.45175	$0.4515 \pm 0.0027$
$\beta_{JLA}$	3.102	$3.107 \pm 0.080$	$\Omega_m h^3$	0.09671	$0.0968 \pm 0.0017$	$r_{\text{drag}}/D_V(0.57)$	0.071778	$0.07174 \pm 0.00036$
$A_{217}^{\text{CIB}}$	67.9	$64.7 \pm 6.5$	$\sigma_8$	0.8199	$0.820 \pm 0.012$	$H(0.57)$	92.975	$92.94^{+0.30}_{-0.26}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8 \Omega_m^{0.5}$	0.4533	$0.4535 \pm 0.0058$	$D_A(0.57)$	1383.3	$1384.1 \pm 8.3$
$A_{143}^{\text{tSZ}}$	7.26	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6096	$0.6097 \pm 0.0073$	$F_{\text{AP}}(0.57)$	0.67356	$0.6736 \pm 0.0042$
$A_{100}^{\text{PS}}$	257.4	$262 \pm 28$	$\sigma_8/h^{0.5}$	0.9932	$0.993 \pm 0.011$	$f\sigma_8(0.57)$	0.4770	$0.4772 \pm 0.0092$
$A_{143}^{\text{PS}}$	38.9	$44 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.4557	$2.456 \pm 0.024$	$\sigma_8(0.57)$	0.6107	$0.6104 \pm 0.0097$
$A_{143 \times 217}^{\text{PS}}$	33.0	$39^{+10}_{-10}$	$z_{\text{re}}$	8.64	$8.5^{+1.4}_{-1.2}$	$f_{2000}^{143}$	29.77	$30.2 \pm 2.7$
$A_{217}^{\text{PS}}$	96.5	$96 \pm 10$	$10^9 A_s$	2.133	$2.129 \pm 0.052$	$f_{2000}^{143 \times 217}$	32.53	$32.7 \pm 1.9$
$A^{\text{kSZ}}$	0.00	$< 4.49$	$10^9 A_s e^{-2\tau}$	1.8770	$1.878 \pm 0.011$	$f_{2000}^{217}$	106.06	$106.2 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.48	$7.5 \pm 1.9$	$D_{40}$	1229.5	$1231 \pm 11$	$\chi^2_{\text{lensing}}$	9.79	$10.3 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.05	$9.1 \pm 1.8$	$D_{220}$	5726.1	$5726 \pm 39$	$\chi^2_{\text{lowTEB}}$	10495.22	$10495.8 \pm 1.1$
$A_{143 \times 217}^{\text{dust}TT}$	17.66	$17.4 \pm 4.1$	$D_{810}$	2533.9	$2534 \pm 13$	$\chi^2_{\text{plik}}$	2435.0	$2454 \pm 14$
$A_{217}^{\text{dust}TT}$	81.8	$81.9 \pm 7.4$	$D_{1420}$	814.88	$814.6 \pm 4.7$	$\chi^2_{\text{H070p6}}$	0.558	$0.65 \pm 0.43$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0814 \pm 0.0061$	$D_{2000}$	230.15	$230.0 \pm 1.5$	$\chi^2_{\text{JLA}}$	695.18	$697.6 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0489	$0.0490 \pm 0.0050$	$n_{s,0.002}$	0.96618	$0.9656 \pm 0.0043$	$\chi^2_{6\text{DF}}$	0.0005	$0.068 \pm 0.095$
$A_{100 \times 217}^{\text{dust}EE}$	0.0996	$0.100 \pm 0.033$	$Y_P$	0.245356	$0.245346^{+0.000073}_{-0.000062}$	$\chi^2_{\text{MGS}}$	1.61	$1.66 \pm 0.70$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1004 \pm 0.0070$	$Y_P^{\text{BBN}}$	0.246682	$0.246673^{+0.000073}_{-0.000062}$	$\chi^2_{\text{DR11CMass}}$	2.57	$2.94 \pm 0.61$
$A_{143 \times 217}^{\text{dust}EE}$	0.2227	$0.225 \pm 0.046$	$10^5 D/H$	2.6073	$2.611 \pm 0.027$	$\chi^2_{\text{DR11LOWZ}}$	0.384	$0.56 \pm 0.52$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$\text{Age/Gyr}$	13.7924	$13.794 \pm 0.026$	$\chi^2_{\text{prior}}$	7.1	$19.3 \pm 5.7$
$A_{100}^{\text{dust}TE}$	0.1416	$0.141 \pm 0.038$	$z_*$	1089.938	$1089.97 \pm 0.26$	$\chi^2_{\text{CMB}}$	12940.0	$12960 \pm 14$
$A_{100 \times 143}^{\text{dust}TE}$	0.1316	$0.131 \pm 0.029$	$r_*$	144.757	$144.74 \pm 0.27$	$\chi^2_{\text{BAO}}$	4.57	$5.2 \pm 1.0$
$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.301 \pm 0.084$	$100\theta_*$	1.041067	$1.04107 \pm 0.00030$			

Best-fit  $\chi^2_{\text{eff}} = 13647.43$ ;  $\Delta\chi^2_{\text{eff}} = -11.61$ ;  $\bar{\chi}^2_{\text{eff}} = 13682.56$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -8.54$ ;  $R - 1 = 0.02987$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMASS: 2.57 ( $\Delta$  0.16) DR11LOWZ: 0.38 ( $\Delta$  -0.10) CMB - smica\_g30\_ftl\_full\_pp: 9.79 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.22 ( $\Delta$  -0.00) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.01 ( $\Delta$  -0.19) Hubble - H070p6: 0.56 ( $\Delta$  -0.16) SN - JLA December\_2013: 695.18 ( $\Delta$  -11.48)

## 22 w+wa

### 22.1 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022247	$0.02222 \pm 0.00022$	$\Omega_m h^2$	0.14280	$0.1430 \pm 0.0019$	$k_D$	0.14060	$0.14061 \pm 0.00050$
$\Omega_c h^2$	0.11990	$0.1202 \pm 0.0020$	$\Omega_m h^3$	0.09128	$0.0915^{+0.0037}_{-0.0046}$	$100\theta_D$	0.160919	$0.16096 \pm 0.00026$
$100\theta_{MC}$	1.040848	$1.04081 \pm 0.00046$	$\sigma_8$	0.8025	$0.804^{+0.029}_{-0.033}$	$z_{eq}$	3397.0	$3403 \pm 45$
$\tau$	0.0754	$0.075 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4744	$0.476 \pm 0.013$	$k_{eq}$	0.010368	$0.01039 \pm 0.00014$
$w$	-0.528	$-0.50^{+0.36}_{-0.26}$	$\sigma_8 \Omega_m^{0.25}$	0.6170	$0.618 \pm 0.016$	$100\theta_{eq}$	0.8138	$0.8128 \pm 0.0085$
$w_a$	-1.35	$-1.50^{+0.75}_{-1.1}$	$\sigma_8/h^{0.5}$	1.0037	$1.006 \pm 0.023$	$100\theta_{s,eq}$	0.44975	$0.4492 \pm 0.0043$
$\ln(10^{10} A_s)$	3.0850	$3.084 \pm 0.036$	$\langle d^2 \rangle^{1/2}$	2.5102	$2.515 \pm 0.049$	$r_{drag}/D_V(0.57)$	0.07234	$0.07235 \pm 0.00058$
$n_s$	0.9654	$0.9644 \pm 0.0057$	$z_{re}$	9.73	$9.6^{+1.9}_{-1.6}$	$H(0.57)$	95.12	$95.1^{+1.5}_{-1.3}$
$y_{cal}$	1.00015	$1.0003 \pm 0.0025$	$10^9 A_s$	2.187	$2.187 \pm 0.080$	$D_A(0.57)$	1380.3	$1379 \pm 12$
$A_{217}^{CIB}$	66.6	$63.8 \pm 6.6$	$10^9 A_s e^{-2\tau}$	1.8806	$1.882 \pm 0.013$	$F_{AP}(0.57)$	0.6876	$0.687 \pm 0.011$
$\xi^{tSZ \times CIB}$	0.03	—	$D_{40}$	1234.8	$1238 \pm 14$	$f\sigma_8(0.57)$	0.4579	$0.460^{+0.023}_{-0.026}$
$A_{143}^{tSZ}$	7.08	$5.1 \pm 1.9$	$D_{220}$	5716.0	$5717 \pm 41$	$\sigma_8(0.57)$	0.5981	$0.599^{+0.021}_{-0.024}$
$A_{100}^{PS}$	252.1	$258 \pm 28$	$D_{810}$	2533.7	$2534 \pm 14$	$f_{2000}^{143}$	29.41	$30.0 \pm 2.9$
$A_{143}^{PS}$	38.9	$44 \pm 8$	$D_{1420}$	814.43	$814.1 \pm 5.0$	$f_{2000}^{143 \times 217}$	32.09	$32.4 \pm 2.1$
$A_{143 \times 217}^{PS}$	33.0	$39 \pm 10$	$D_{2000}$	230.43	$230.3 \pm 1.8$	$f_{2000}^{217}$	105.75	$106.0 \pm 2.0$
$A_{217}^{PS}$	97.8	$97 \pm 10$	$n_{s,0.002}$	0.9654	$0.9644 \pm 0.0057$	$\chi_{lowTEB}^2$	10496.45	$10497.5 \pm 2.2$
$A^{kSZ}$	0.00	$< 4.59$	$Y_P$	0.245339	$0.245321 \pm 0.000098$	$\chi_{plik}^2$	762.9	$776.5 \pm 5.5$
$A_{100}^{dustTT}$	7.31	$7.4 \pm 1.9$	$Y_P^{BBN}$	0.246665	$0.246648 \pm 0.000099$	$\chi_{6DF}^2$	0.60	$0.87 \pm 0.85$
$A_{143}^{dustTT}$	8.96	$9.0 \pm 1.8$	$10^5 D/H$	2.6145	$2.621 \pm 0.041$	$\chi_{MGS}^2$	0.313	$0.65 \pm 0.80$
$A_{143 \times 217}^{dustTT}$	17.45	$17.1 \pm 4.2$	Age/Gyr	13.7772	$13.779 \pm 0.036$	$\chi_{DR11CMass}^2$	1.45	$2.4 \pm 1.5$
$A_{217}^{dustTT}$	81.9	$81.8 \pm 7.4$	$z_*$	1090.066	$1090.13 \pm 0.39$	$\chi_{DR11LOWZ}^2$	0.553	$0.76 \pm 0.78$
$c_{100}$	0.99786	$0.99788 \pm 0.00078$	$r_*$	144.550	$144.51 \pm 0.45$	$\chi_{prior}^2$	2.07	$7.3 \pm 3.5$
$c_{217}$	0.99588	$0.9959 \pm 0.0015$	$100\theta_*$	1.041037	$1.04101 \pm 0.00045$	$\chi_{CMB}^2$	11259.4	$11274.0 \pm 5.5$
$H_0$	63.92	$63.9^{+2.3}_{-3.1}$	$D_A/Gpc$	13.8852	$13.882 \pm 0.042$	$\chi_{BAO}^2$	2.91	$4.6 \pm 1.7$
$\Omega_\Lambda$	0.6505	$0.648 \pm 0.029$	$z_{drag}$	1059.628	$1059.59 \pm 0.45$			
$\Omega_m$	0.3495	$0.352 \pm 0.029$	$r_{drag}$	147.255	$147.22 \pm 0.46$			

Best-fit  $\chi_{eff}^2 = 11264.38$ ;  $\Delta\chi_{eff}^2 = -2.06$ ;  $\bar{\chi}_{eff}^2 = 11285.97$ ;  $\Delta\bar{\chi}_{eff}^2 = -0.40$ ;  $R - 1 = 0.00522$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.60 ( $\Delta$  0.58) MGS: 0.31 ( $\Delta$  -0.97) DR11CMass: 1.45 ( $\Delta$  -1.00) DR11LOWZ: 0.55 ( $\Delta$  -0.06) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10496.45 ( $\Delta$  0.03) plik\_dx11dr2\_HM.v18.TT: 762.95 ( $\Delta$  -0.65)

## 22.2 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022276	$0.02224 \pm 0.00022$	$\Omega_m h^2$	0.14135	$0.1417 \pm 0.0017$	$k_D$	0.140245	$0.14027 \pm 0.00045$
$\Omega_c h^2$	0.11843	$0.1188 \pm 0.0018$	$\Omega_m h^3$	0.09081	$0.0906^{+0.0038}_{-0.0045}$	$100\theta_D$	0.160959	$0.16099^{+0.00024}_{-0.00029}$
$100\theta_{MC}$	1.041045	$1.04099 \pm 0.00044$	$\sigma_8$	0.7846	$0.782 \pm 0.026$	$z_{eq}$	3362.4	$3370 \pm 40$
$\tau$	0.0646	$0.062 \pm 0.017$	$\sigma_8 \Omega_m^{0.5}$	0.4591	$0.4609 \pm 0.0089$	$k_{eq}$	0.010262	$0.01029 \pm 0.00012$
$w$	-0.620	$-0.54^{+0.36}_{-0.30}$	$\sigma_8 \Omega_m^{0.25}$	0.6002	$0.600 \pm 0.010$	$100\theta_{eq}$	0.8203	$0.8188 \pm 0.0076$
$w_a$	-0.95	$-1.25 \pm 0.86$	$\sigma_8/h^{0.5}$	0.9789	$0.978 \pm 0.015$	$100\theta_{s,eq}$	0.45312	$0.4524 \pm 0.0039$
$\ln(10^{10} A_s)$	3.0596	$3.054 \pm 0.031$	$\langle d^2 \rangle^{1/2}$	2.4479	$2.451 \pm 0.027$	$r_{drag}/D_V(0.57)$	0.07228	$0.07240 \pm 0.00059$
$n_s$	0.9686	$0.9670 \pm 0.0055$	$z_{re}$	8.69	$8.3^{+1.8}_{-1.6}$	$H(0.57)$	94.87	$95.1^{+1.7}_{-1.4}$
$y_{cal}$	1.00013	$1.0001^{+0.0024}_{-0.0027}$	$10^9 A_s$	2.132	$2.122 \pm 0.065$	$D_A(0.57)$	1385.1	$1383 \pm 12$
$A_{217}^{CIB}$	67.1	$64.4 \pm 6.7$	$10^9 A_s e^{-2\tau}$	1.8735	$1.875 \pm 0.012$	$F_{AP}(0.57)$	0.6882	$0.689 \pm 0.012$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{40}$	1223.1	$1226 \pm 12$	$f\sigma_8(0.57)$	0.4463	$0.445^{+0.021}_{-0.024}$
$A_{143}^{tSZ}$	7.18	$5.0 \pm 1.9$	$D_{220}$	5715.4	$5716 \pm 42$	$\sigma_8(0.57)$	0.5852	$0.583 \pm 0.019$
$A_{100}^{PS}$	253.8	$260 \pm 27$	$D_{810}$	2532.6	$2532 \pm 14$	$f_{2000}^{143}$	29.84	$30.6 \pm 2.8$
$A_{143}^{PS}$	39.0	$44 \pm 8$	$D_{1420}$	815.1	$814.1 \pm 5.2$	$f_{2000}^{143 \times 217}$	32.45	$32.9 \pm 2.0$
$A_{143 \times 217}^{PS}$	32.6	$39^{+10}_{-10}$	$D_{2000}$	230.29	$229.9 \pm 1.8$	$f_{2000}^{217}$	106.03	$106.4 \pm 2.0$
$A_{217}^{PS}$	97.3	$96 \pm 10$	$n_{s,0.002}$	0.9686	$0.9670 \pm 0.0055$	$\chi^2_{lensing}$	9.32	$10.2 \pm 1.7$
$A^{kSZ}$	0.00	$< 5.11$	$Y_P$	0.245352	$0.24533^{+0.00011}_{-0.000098}$	$\chi^2_{lowTEB}$	10494.90	$10495.8 \pm 1.3$
$A_{100}^{dustTT}$	7.40	$7.4 \pm 1.9$	$Y_P^{BBN}$	0.246678	$0.24666^{+0.00011}_{-0.000098}$	$\chi^2_{plik}$	766.2	$779.1 \pm 5.4$
$A_{143}^{dustTT}$	9.09	$9.1 \pm 1.8$	$10^5 D/H$	2.6090	$2.617^{+0.041}_{-0.046}$	$\chi^2_{6DF}$	0.52	$0.89 \pm 0.90$
$A_{143 \times 217}^{dustTT}$	17.70	$17.3 \pm 4.2$	Age/Gyr	13.7925	$13.790 \pm 0.035$	$\chi^2_{MGS}$	0.346	$0.64 \pm 0.77$
$A_{217}^{dustTT}$	82.1	$81.9 \pm 7.6$	$z_*$	1089.899	$1089.98 \pm 0.39$	$\chi^2_{DR11CMass}$	1.33	$2.3 \pm 1.5$
$c_{100}$	0.99789	$0.99789 \pm 0.00077$	$r_*$	144.911	$144.85 \pm 0.40$	$\chi^2_{DR11LOWZ}$	0.659	$0.79 \pm 0.79$
$c_{217}$	0.99594	$0.9960^{+0.0014}_{-0.0016}$	$100\theta_*$	1.041244	$1.04119 \pm 0.00043$	$\chi^2_{prior}$	2.10	$7.4 \pm 3.6$
$H_0$	64.25	$63.9^{+2.5}_{-3.2}$	$D_A/Gpc$	13.9171	$13.912 \pm 0.037$	$\chi^2_{CMB}$	11270.4	$11285.1 \pm 5.4$
$\Omega_\Lambda$	0.6575	$0.651 \pm 0.030$	$z_{drag}$	1059.589	$1059.54 \pm 0.46$	$\chi^2_{BAO}$	2.86	$4.6 \pm 1.7$
$\Omega_m$	0.3425	$0.349 \pm 0.030$	$r_{drag}$	147.615	$147.56 \pm 0.40$			

Best-fit  $\chi^2_{eff} = 11275.37$ ;  $\Delta\chi^2_{eff} = -1.37$ ;  $\bar{\chi}^2_{eff} = 11297.07$ ;  $\Delta\bar{\chi}^2_{eff} = 0.38$ ;  $R - 1 = 0.01814$   
 $\chi^2_{eff}$ : BAO - 6DF: 0.52 ( $\Delta$  0.51) MGS: 0.35 ( $\Delta$  -1.06) DR11CMass: 1.33 ( $\Delta$  -1.07) DR11LOWZ: 0.66 ( $\Delta$  0.18) CMB - smica\_g30\_ftl\_full\_pp: 9.32 ( $\Delta$  0.08) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10494.90 ( $\Delta$  0.05) plik\_dx11dr2\_HM\_v18\_TT: 766.19 ( $\Delta$  -0.01)

### 22.3 base\_w\_wa\_plikHM\_TTTEEE\_lowTEB\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022258	$0.02224 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	$100\theta_*$	1.040947	$1.04095 \pm 0.00031$
$\Omega_c h^2$	0.12000	$0.1200 \pm 0.0014$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.339 \pm 0.080$	$D_A/\text{Gpc}$	13.8833	$13.884 \pm 0.029$
$100\theta_{\text{MC}}$	1.040744	$1.04075 \pm 0.00032$	$A_{217}^{\text{dust}TE}$	1.675	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.666	$1059.64 \pm 0.31$
$\tau$	0.0770	$0.076 \pm 0.017$	$c_{100}$	0.99820	$0.99817 \pm 0.00078$	$r_{\text{drag}}$	147.218	$147.23 \pm 0.30$
$w$	-0.503	$-0.51^{+0.37}_{-0.27}$	$c_{217}$	0.99593	$0.9959 \pm 0.0014$	$k_D$	0.140648	$0.14062 \pm 0.00033$
$w_a$	-1.44	$-1.47^{+0.80}_{-1.0}$	$H_0$	63.76	$64.0^{+2.3}_{-3.2}$	$100\theta_D$	0.160888	$0.16091 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0894	$3.088 \pm 0.033$	$\Omega_\Lambda$	0.6485	$0.649^{+0.028}_{-0.033}$	$z_{\text{eq}}$	3399.4	$3400 \pm 31$
$n_s$	0.96483	$0.9641 \pm 0.0046$	$\Omega_m$	0.3515	$0.351^{+0.033}_{-0.028}$	$k_{\text{eq}}$	0.010375	$0.010377 \pm 0.000095$
$y_{\text{cal}}$	1.00016	$1.0004 \pm 0.0025$	$\Omega_m h^2$	0.14290	$0.1429 \pm 0.0013$	$100\theta_{\text{eq}}$	0.8134	$0.8133 \pm 0.0059$
$A_{217}^{\text{CIB}}$	64.5	$63.6 \pm 6.6$	$\Omega_m h^3$	0.09111	$0.0915^{+0.0035}_{-0.0047}$	$100\theta_{s,\text{eq}}$	0.44949	$0.4495 \pm 0.0030$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\sigma_8$	0.8034	$0.805^{+0.026}_{-0.031}$	$r_{\text{drag}}/D_V(0.57)$	0.07236	$0.07237^{+0.00061}_{-0.00055}$
$A_{143}^{\text{tSZ}}$	6.98	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4763	$0.476 \pm 0.011$	$H(0.57)$	95.21	$95.1^{+1.6}_{-1.3}$
$A_{100}^{\text{PS}}$	252.6	$260 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6186	$0.619 \pm 0.013$	$D_A(0.57)$	1379.8	$1379 \pm 12$
$A_{143}^{\text{PS}}$	43.4	$44 \pm 8$	$\sigma_8/h^{0.5}$	1.0062	$1.006 \pm 0.019$	$F_{\text{AP}}(0.57)$	0.6880	$0.687 \pm 0.011$
$A_{143 \times 217}^{\text{PS}}$	42.5	$40 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5189	$2.519 \pm 0.041$	$f\sigma_8(0.57)$	0.4582	$0.460^{+0.021}_{-0.025}$
$A_{217}^{\text{PS}}$	101.7	$98 \pm 10$	$z_{\text{re}}$	9.87	$9.7^{+1.7}_{-1.4}$	$\sigma_8(0.57)$	0.5988	$0.600^{+0.020}_{-0.023}$
$A^{\text{kSZ}}$	0.00	$< 4.00$	$10^9 A_s$	2.196	$2.194 \pm 0.071$	$f_{2000}^{143}$	28.85	$29.5 \pm 2.7$
$A_{100}^{\text{dust}TT}$	7.35	$7.4 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8828	$1.883 \pm 0.012$	$f_{2000}^{143 \times 217}$	31.97	$32.2 \pm 1.9$
$A_{143}^{\text{dust}TT}$	8.99	$8.9 \pm 1.8$	$D_{40}$	1238.2	$1241 \pm 13$	$f_{2000}^{217}$	105.47	$105.8 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.91	$16.9 \pm 4.2$	$D_{220}$	5724.8	$5728 \pm 38$	$\chi_{\text{lowTEB}}^2$	10496.87	$10497.7 \pm 2.0$
$A_{217}^{\text{dust}TT}$	82.5	$81.6 \pm 7.4$	$D_{810}$	2535.7	$2536 \pm 13$	$\chi_{\text{plik}}^2$	2431.5	$2450.0 \pm 6.7$
$A_{100}^{\text{dust}EE}$	0.0811	$0.0811 \pm 0.0057$	$D_{1420}$	814.90	$814.5 \pm 4.7$	$\chi_{6\text{DF}}^2$	0.65	$0.88 \pm 0.85$
$A_{100 \times 143}^{\text{dust}EE}$	0.04879	$0.0487 \pm 0.0050$	$D_{2000}$	230.62	$230.4 \pm 1.6$	$\chi_{\text{MGS}}^2$	0.281	$0.67 \pm 0.83$
$A_{100 \times 217}^{\text{dust}EE}$	0.0997	$0.0995 \pm 0.033$	$n_{s,0.002}$	0.96483	$0.9641 \pm 0.0046$	$\chi_{\text{DR11CMass}}^2$	1.44	$2.3 \pm 1.5$
$A_{143}^{\text{dust}EE}$	0.1001	$0.1000 \pm 0.0068$	$Y_P$	0.245344	$0.245334 \pm 0.000070$	$\chi_{\text{DR11LOWZ}}^2$	0.553	$0.74 \pm 0.77$
$A_{143 \times 217}^{\text{dust}EE}$	0.2235	$0.224 \pm 0.047$	$Y_P^{\text{BBN}}$	0.246670	$0.246660 \pm 0.000070$	$\chi_{\text{prior}}^2$	6.6	$19.2 \pm 5.4$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$10^5 D/H$	2.6125	$2.616 \pm 0.029$	$\chi_{\text{CMB}}^2$	12928.3	$12947.7 \pm 6.7$
$A_{100}^{\text{dust}TE}$	0.1405	$0.141 \pm 0.038$	Age/Gyr	13.7765	$13.778 \pm 0.032$	$\chi_{\text{BAO}}^2$	2.92	$4.6 \pm 1.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.132 \pm 0.029$	$z_*$	1090.060	$1090.09 \pm 0.28$			
$A_{100 \times 217}^{\text{dust}TE}$	0.302	$0.302 \pm 0.085$	$r_*$	144.518	$144.52 \pm 0.31$			

Best-fit  $\chi_{\text{eff}}^2 = 12937.86$ ;  $\Delta\chi_{\text{eff}}^2 = -2.30$ ;  $\bar{\chi}_{\text{eff}}^2 = 12971.50$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -0.97$ ;  $R - 1 = 0.00886$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.65 ( $\Delta$  0.62) MGS: 0.28 ( $\Delta$  -0.94) DR11CMass: 1.44 ( $\Delta$  -1.06) DR11LOWZ: 0.55 ( $\Delta$  -0.13) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10496.87

( $\Delta$  -0.55) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.46 ( $\Delta$  -0.08)

## 22.4 base\_w\_wa\_plikHM\_TTTEEE\_lowTEB\_BAO\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022277	$0.02225 \pm 0.00015$	$A_{143}^{\text{dust}TE}$	0.155	$0.158 \pm 0.053$	$100\theta_*$	1.041075	$1.04106 \pm 0.00030$
$\Omega_c h^2$	0.11909	$0.1194 \pm 0.0013$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.337 \pm 0.080$	$D_A/\text{Gpc}$	13.9028	$13.898 \pm 0.027$
$100\theta_{\text{MC}}$	1.040882	$1.04086 \pm 0.00031$	$A_{217}^{\text{dust}TE}$	1.676	$1.67 \pm 0.25$	$z_{\text{drag}}$	1059.666	$1059.60 \pm 0.31$
$\tau$	0.0607	$0.058 \pm 0.015$	$c_{100}$	0.99815	$0.99815 \pm 0.00077$	$r_{\text{drag}}$	147.436	$147.40 \pm 0.29$
$w$	-0.597	$-0.54^{+0.36}_{-0.30}$	$c_{217}$	0.99607	$0.9961 \pm 0.0014$	$k_D$	0.140431	$0.14045 \pm 0.00031$
$w_a$	-1.08	$-1.30 \pm 0.86$	$H_0$	64.23	$64.1^{+2.4}_{-3.4}$	$100\theta_D$	0.160910	$0.16094 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0534	$3.050 \pm 0.027$	$\Omega_\Lambda$	0.6557	$0.651 \pm 0.030$	$z_{\text{eq}}$	3378.2	$3384 \pm 30$
$n_s$	0.96604	$0.9651^{+0.0048}_{-0.0043}$	$\Omega_m$	0.3443	$0.349 \pm 0.030$	$k_{\text{eq}}$	0.010311	$0.010329 \pm 0.000091$
$y_{\text{cal}}$	0.99986	$1.0001 \pm 0.0024$	$\Omega_m h^2$	0.14201	$0.1423 \pm 0.0012$	$100\theta_{\text{eq}}$	0.8173	$0.8162 \pm 0.0057$
$A_{217}^{\text{CIB}}$	67.7	$64.6 \pm 6.5$	$\Omega_m h^3$	0.09121	$0.0911^{+0.0037}_{-0.0048}$	$100\theta_{\text{s,eq}}$	0.45155	$0.4510 \pm 0.0029$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$\sigma_8$	0.7864	$0.785^{+0.024}_{-0.030}$	$r_{\text{drag}}/D_V(0.57)$	0.07227	$0.07236 \pm 0.00060$
$A_{143}^{\text{tSZ}}$	7.30	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.5}$	0.4614	$0.4627^{+0.0091}_{-0.0078}$	$H(0.57)$	94.91	$95.1 \pm 1.5$
$A_{100}^{\text{PS}}$	257.0	$262 \pm 27$	$\sigma_8 \Omega_m^{0.25}$	0.6024	$0.6027 \pm 0.0091$	$D_A(0.57)$	1383.3	$1381 \pm 12$
$A_{143}^{\text{PS}}$	38.9	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9812	$0.981 \pm 0.014$	$F_{\text{AP}}(0.57)$	0.6875	$0.688 \pm 0.011$
$A_{143 \times 217}^{\text{PS}}$	33.2	$40^{+10}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4560	$2.459 \pm 0.024$	$f\sigma_8(0.57)$	0.4483	$0.448^{+0.020}_{-0.025}$
$A_{217}^{\text{PS}}$	96.8	$97 \pm 10$	$z_{\text{re}}$	8.31	$8.0^{+1.5}_{-1.4}$	$\sigma_8(0.57)$	0.5863	$0.586^{+0.018}_{-0.022}$
$A^{\text{kSZ}}$	0.00	$< 4.45$	$10^9 A_s$	2.119	$2.112 \pm 0.056$	$f_{2000}^{143}$	29.78	$30.2^{+2.4}_{-2.7}$
$A_{100}^{\text{dust}TT}$	7.47	$7.5 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8764	$1.878 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.56	$32.8 \pm 1.8$
$A_{143}^{\text{dust}TT}$	9.12	$9.1 \pm 1.8$	$D_{40}$	1227.9	$1231 \pm 11$	$f_{2000}^{217}$	106.07	$106.3 \pm 1.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.70	$17.4 \pm 4.3$	$D_{220}$	5722.0	$5724 \pm 36$	$\chi_{\text{lensing}}^2$	9.94	$10.7 \pm 2.0$
$A_{217}^{\text{dust}TT}$	81.8	$82.0 \pm 7.6$	$D_{810}$	2532.7	$2534 \pm 13$	$\chi_{\text{lowTEB}}^2$	10495.34	$10496.0 \pm 1.1$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0815 \pm 0.0057$	$D_{1420}$	814.46	$814.4 \pm 4.6$	$\chi_{\text{plik}}^2$	2434.8	$2453.1 \pm 6.7$
$A_{100 \times 143}^{\text{dust}EE}$	0.0493	$0.0491 \pm 0.0050$	$D_{2000}$	230.03	$229.9 \pm 1.5$	$\chi_{6\text{DF}}^2$	0.53	$0.87 \pm 0.84$
$A_{100 \times 217}^{\text{dust}EE}$	0.0992	$0.100 \pm 0.033$	$n_{\text{s},0.002}$	0.96604	$0.9651^{+0.0048}_{-0.0043}$	$\chi_{\text{MGS}}^2$	0.346	$0.68 \pm 0.85$
$A_{143}^{\text{dust}EE}$	0.1006	$0.1003 \pm 0.0068$	$Y_{\text{P}}$	0.245352	$0.245336 \pm 0.000070$	$\chi_{\text{DR11CMass}}^2$	1.37	$2.3 \pm 1.6$
$A_{143 \times 217}^{\text{dust}EE}$	0.2239	$0.226 \pm 0.046$	$Y_{\text{P}}^{\text{BBN}}$	0.246678	$0.246662 \pm 0.000071$	$\chi_{\text{DR11LOWZ}}^2$	0.632	$0.78 \pm 0.80$
$A_{217}^{\text{dust}EE}$	0.655	$0.65 \pm 0.13$	$10^5 \text{D}/\text{H}$	2.6090	$2.615 \pm 0.029$	$\chi_{\text{prior}}^2$	7.1	$19.3 \pm 5.4$
$A_{100}^{\text{dust}TE}$	0.1398	$0.141 \pm 0.037$	$\text{Age}/\text{Gyr}$	13.7867	$13.785 \pm 0.032$	$\chi_{\text{CMB}}^2$	12940.1	$12959.8 \pm 6.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1310	$0.132 \pm 0.029$	$z_*$	1089.958	$1090.02 \pm 0.28$	$\chi_{\text{BAO}}^2$	2.88	$4.7 \pm 1.8$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.304 \pm 0.085$	$r_*$	144.738	$144.69 \pm 0.29$			

Best-fit  $\chi^2_{\text{eff}} = 12950.11$ ;  $\Delta\chi^2_{\text{eff}} = -1.47$ ;  $\bar{\chi}^2_{\text{eff}} = 12983.72$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = 0.08$ ;  $R - 1 = 0.04096$   
 $\chi^2_{\text{eff}}$ : BAO - 6DF: 0.53 ( $\Delta$  0.51) MGS: 0.35 ( $\Delta$  -0.93) DR11CMass: 1.37 ( $\Delta$  -1.08) DR11LOWZ: 0.63 ( $\Delta$  0.02) CMB - smica\_g30\_ftl\_full\_pp: 9.94 ( $\Delta$  0.26) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.34 ( $\Delta$  0.14) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.85 ( $\Delta$  -0.45)

## 22.5 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022224	$0.02220 \pm 0.00022$	$\Omega_m$	0.3087	$0.309 \pm 0.010$	$k_D$	0.14060	$0.14063 \pm 0.00051$
$\Omega_c h^2$	0.12007	$0.1203 \pm 0.0020$	$\Omega_m h^2$	0.14294	$0.1432 \pm 0.0019$	$100\theta_D$	0.160948	$0.16097 \pm 0.00026$
$100\theta_{MC}$	1.040845	$1.04080 \pm 0.00045$	$\Omega_m h^3$	0.09726	$0.0975 \pm 0.0021$	$z_{\text{eq}}$	3400.3	$3406 \pm 46$
$\tau$	0.0760	$0.074 \pm 0.019$	$\sigma_8$	0.8398	$0.841 \pm 0.021$	$k_{\text{eq}}$	0.010378	$0.01040 \pm 0.00014$
$w$	-0.948	$-0.93 \pm 0.11$	$\sigma_8 \Omega_m^{0.5}$	0.4666	$0.467 \pm 0.012$	$100\theta_{\text{eq}}$	0.8132	$0.8121 \pm 0.0085$
$w_a$	-0.311	$-0.41^{+0.50}_{-0.39}$	$\sigma_8 \Omega_m^{0.25}$	0.6260	$0.627 \pm 0.015$	$100\theta_{s,\text{eq}}$	0.44942	$0.4489 \pm 0.0044$
$\ln(10^{10} A_s)$	3.0869	$3.084 \pm 0.037$	$\sigma_8/h^{0.5}$	1.0181	$1.019 \pm 0.022$	$r_{\text{drag}}/D_V(0.57)$	0.071967	$0.07197 \pm 0.00050$
$n_s$	0.9652	$0.9641 \pm 0.0057$	$\langle d^2 \rangle^{1/2}$	2.5123	$2.515 \pm 0.050$	$H(0.57)$	93.27	$93.21 \pm 0.57$
$y_{\text{cal}}$	1.00035	$1.0003 \pm 0.0025$	$z_{\text{re}}$	9.80	$9.6^{+1.9}_{-1.6}$	$D_A(0.57)$	1377.0	$1376 \pm 12$
$\alpha_{JLA}$	0.1411	$0.1411 \pm 0.0066$	$10^9 A_s$	2.191	$2.186 \pm 0.080$	$F_{\text{AP}}(0.57)$	0.67258	$0.6717 \pm 0.0049$
$\beta_{JLA}$	3.098	$3.102 \pm 0.081$	$10^9 A_s e^{-2\tau}$	1.8820	$1.883 \pm 0.013$	$f\sigma_8(0.57)$	0.4893	$0.491 \pm 0.015$
$A_{217}^{\text{CIB}}$	66.4	$63.8 \pm 6.6$	$D_{40}$	1235.6	$1238 \pm 14$	$\sigma_8(0.57)$	0.6257	$0.626 \pm 0.015$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.08	—	$D_{220}$	5715.3	$5716 \pm 41$	$f_{2000}^{143}$	29.42	$30.0 \pm 2.9$
$A_{143}^{\text{tSZ}}$	7.19	$5.1 \pm 1.9$	$D_{810}$	2534.9	$2535 \pm 13$	$f_{2000}^{143 \times 217}$	32.20	$32.4 \pm 2.1$
$A_{100}^{\text{PS}}$	252.4	$258 \pm 28$	$D_{1420}$	814.76	$814.2 \pm 5.0$	$f_{2000}^{217}$	105.84	$106.1 \pm 2.0$
$A_{143}^{\text{PS}}$	39.5	$44 \pm 8$	$D_{2000}$	230.49	$230.2 \pm 1.8$	$\chi^2_{\text{lowTEB}}$	10496.29	$10497.3 \pm 2.1$
$A_{143 \times 217}^{\text{PS}}$	34.7	$39 \pm 10$	$n_{s,0.002}$	0.9652	$0.9641 \pm 0.0057$	$\chi^2_{\text{plik}}$	763.1	$776.8 \pm 5.6$
$A_{217}^{\text{PS}}$	98.5	$98 \pm 10$	$Y_P$	0.245328	$0.245315 \pm 0.000099$	$\chi^2_{\text{H070p6}}$	0.560	$0.62 \pm 0.45$
$A^{\text{kSZ}}$	0.00	$< 4.51$	$Y_P^{\text{BBN}}$	0.246655	$0.246641 \pm 0.000099$	$\chi^2_{\text{JLA}}$	695.04	$698.0 \pm 2.4$
$A_{100}^{\text{dustTT}}$	7.39	$7.4 \pm 1.9$	$10^5 D/H$	2.6189	$2.624 \pm 0.041$	$\chi^2_{6\text{DF}}$	0.0000	$0.071 \pm 0.099$
$A_{143}^{\text{dustTT}}$	9.04	$9.0 \pm 1.8$	Age/Gyr	13.7716	$13.771^{+0.035}_{-0.040}$	$\chi^2_{\text{MGS}}$	1.75	$1.91 \pm 0.78$
$A_{143 \times 217}^{\text{dustTT}}$	17.63	$17.1 \pm 4.2$	$z_*$	1090.109	$1090.17 \pm 0.39$	$\chi^2_{\text{DR11CMass}}$	2.68	$3.4 \pm 1.1$
$A_{217}^{\text{dustTT}}$	82.0	$81.8 \pm 7.4$	$r_*$	144.525	$144.48 \pm 0.46$	$\chi^2_{\text{DR11LOWZ}}$	0.199	$0.37 \pm 0.47$
$c_{100}$	0.99792	$0.99789 \pm 0.00078$	$100\theta_*$	1.041047	$1.04100 \pm 0.00045$	$\chi^2_{\text{prior}}$	2.04	$7.3 \pm 3.5$
$c_{217}$	0.99589	$0.9959 \pm 0.0015$	$D_A/\text{Gpc}$	13.8827	$13.879 \pm 0.043$	$\chi^2_{\text{CMB}}$	11259.4	$11274.1 \pm 5.5$
$H_0$	68.04	$68.1 \pm 1.1$	$z_{\text{drag}}$	1059.589	$1059.57 \pm 0.45$	$\chi^2_{\text{BAO}}$	4.63	$5.8 \pm 1.7$
$\Omega_\Lambda$	0.6913	$0.691 \pm 0.010$	$r_{\text{drag}}$	147.237	$147.19 \pm 0.46$			

Best-fit  $\chi^2_{\text{eff}} = 11961.65$ ;  $\bar{\chi}^2_{\text{eff}} = 11985.69$ ;  $R - 1 = 0.00884$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.75 DR11CMass: 2.68 DR11LOWZ: 0.20 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.29 plik\_dx11dr2\_HM\_v18\_TT: 763.10

**22.6 base\_w\_wa\_plikHM\_TT\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing**

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022279	$0.02223 \pm 0.00022$	$\Omega_m$	0.3066	$0.307 \pm 0.010$	$k_D$	0.140294	$0.14029 \pm 0.00046$
$\Omega_c h^2$	0.11859	$0.1189 \pm 0.0018$	$\Omega_m h^2$	0.14151	$0.1418 \pm 0.0017$	$100\theta_D$	0.160946	$0.16100 \pm 0.00026$
$100\theta_{MC}$	1.041017	$1.04096 \pm 0.00044$	$\Omega_m h^3$	0.09613	$0.0964 \pm 0.0020$	$z_{eq}$	3366.2	$3373 \pm 41$
$\tau$	0.0651	$0.062 \pm 0.018$	$\sigma_8$	0.8166	$0.817 \pm 0.014$	$k_{eq}$	0.010274	$0.01030 \pm 0.00013$
$w$	-0.974	$-0.96 \pm 0.11$	$\sigma_8 \Omega_m^{0.5}$	0.4522	$0.4529 \pm 0.0074$	$100\theta_{eq}$	0.8196	$0.8182 \pm 0.0079$
$w_a$	-0.111	$-0.19^{+0.45}_{-0.34}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.6084 \pm 0.0087$	$100\theta_{s,eq}$	0.45275	$0.4520 \pm 0.0041$
$\ln(10^{10} A_s)$	3.0611	$3.056 \pm 0.032$	$\sigma_8/h^{0.5}$	0.9908	$0.991 \pm 0.013$	$r_{drag}/D_V(0.57)$	0.07200	$0.07200 \pm 0.00051$
$n_s$	0.9681	$0.9667 \pm 0.0057$	$\langle d^2 \rangle^{1/2}$	2.4498	$2.451 \pm 0.027$	$H(0.57)$	93.26	$93.20 \pm 0.60$
$y_{cal}$	1.00019	$1.0002 \pm 0.0025$	$z_{re}$	8.74	$8.4^{+1.9}_{-1.5}$	$D_A(0.57)$	1380.5	$1380 \pm 12$
$\alpha_{JLA}$	0.1412	$0.1411 \pm 0.0066$	$10^9 A_s$	2.135	$2.125 \pm 0.068$	$F_{AP}(0.57)$	0.67422	$0.6734 \pm 0.0047$
$\beta_{JLA}$	3.101	$3.103 \pm 0.081$	$10^9 A_s e^{-2\tau}$	1.8745	$1.876 \pm 0.012$	$f\sigma_8(0.57)$	0.4734	$0.475 \pm 0.011$
$A_{217}^{CIB}$	67.3	$64.7 \pm 6.6$	$D_{40}$	1224.5	$1227 \pm 12$	$\sigma_8(0.57)$	0.6090	$0.609 \pm 0.010$
$\xi^{tSZ \times CIB}$	0.00	—	$D_{220}$	5717.4	$5716 \pm 40$	$f_{2000}^{143}$	29.89	$30.6 \pm 2.9$
$A_{143}^{tSZ}$	7.20	$5.0 \pm 2.0$	$D_{810}$	2533.3	$2533 \pm 14$	$f_{2000}^{143 \times 217}$	32.47	$32.9 \pm 2.1$
$A_{100}^{PS}$	253.6	$260 \pm 28$	$D_{1420}$	815.3	$814.4 \pm 5.1$	$f_{2000}^{217}$	106.03	$106.4 \pm 2.0$
$A_{143}^{PS}$	39.0	$44 \pm 8$	$D_{2000}$	230.31	$229.9 \pm 1.8$	$\chi_{lensing}^2$	9.31	$10.1 \pm 1.7$
$A_{143 \times 217}^{PS}$	32.6	$39^{+9}_{-10}$	$n_{s,0.002}$	0.9681	$0.9667 \pm 0.0057$	$\chi_{lowTEB}^2$	10494.81	$10495.7 \pm 1.3$
$A_{217}^{PS}$	97.2	$96 \pm 10$	$Y_P$	0.245353	$0.24533 \pm 0.00010$	$\chi_{plik}^2$	766.2	$779.2 \pm 7.5$
$A^{kSZ}$	0.02	$< 5.07$	$Y_P^{BBN}$	0.246679	$0.24665 \pm 0.00010$	$\chi_{H070p6}^2$	0.629	$0.70 \pm 0.48$
$A_{100}^{dustTT}$	7.51	$7.5 \pm 1.9$	$10^5 D/H$	2.6086	$2.619 \pm 0.042$	$\chi_{JLA}^2$	695.13	$698.1 \pm 2.4$
$A_{143}^{dustTT}$	9.04	$9.1 \pm 1.8$	Age/Gyr	13.7850	$13.787 \pm 0.038$	$\chi_{6DF}^2$	0.0003	$0.073 \pm 0.097$
$A_{143 \times 217}^{dustTT}$	17.47	$17.1 \pm 4.2$	$z_*$	1089.910	$1090.01 \pm 0.39$	$\chi_{MGS}^2$	1.68	$1.83 \pm 0.78$
$A_{217}^{dustTT}$	81.8	$81.6 \pm 7.3$	$r_*$	144.868	$144.82 \pm 0.41$	$\chi_{DR11CMass}^2$	2.50	$3.2 \pm 1.1$
$c_{100}$	0.99795	$0.99788 \pm 0.00077$	$100\theta_*$	1.041214	$1.04116 \pm 0.00043$	$\chi_{DR11LOWZ}^2$	0.239	$0.42 \pm 0.50$
$c_{217}$	0.99596	$0.9960 \pm 0.0015$	$D_A/Gpc$	13.9134	$13.909 \pm 0.039$	$\chi_{prior}^2$	2.04	$7.5 \pm 3.6$
$H_0$	67.93	$68.0 \pm 1.1$	$z_{drag}$	1059.628	$1059.52 \pm 0.45$	$\chi_{CMB}^2$	11270.3	$11285.0 \pm 7.6$
$\Omega_\Lambda$	0.6934	$0.693 \pm 0.010$	$r_{drag}$	147.568	$147.54 \pm 0.42$	$\chi_{BAO}^2$	4.42	$5.6 \pm 1.7$

Best-fit  $\chi_{eff}^2 = 11972.55$ ;  $\Delta\chi_{eff}^2 = -11.51$ ;  $\bar{\chi}_{eff}^2 = 11996.80$ ;  $\Delta\bar{\chi}_{eff}^2 = -7.22$ ;  $R - 1 = 0.02467$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.68 ( $\Delta$  0.14) DR11CMass: 2.50 ( $\Delta$  0.09) DR11LOWZ: 0.24 ( $\Delta$  -0.13) CMB - smica\_g30\_ftl\_full\_pp: 9.31 ( $\Delta$  0.05) lowl\_SMW\_70\_dx11d.2014.10.03  
10494.81 ( $\Delta$  -0.11) plik\_dx11dr2\_HM\_v18\_TT: 766.21 ( $\Delta$  0.08) Hubble - H070p6: 0.63 ( $\Delta$  -0.04) SN - JLA December\_2013: 695.13 ( $\Delta$  -11.50)



## 22.7 base\_w\_wa\_plikHM\_TTTEE\_lowTEB\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022262	$0.02224 \pm 0.00015$	$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.304 \pm 0.085$	$100\theta_*$	1.040957	$1.04093 \pm 0.00031$
$\Omega_c h^2$	0.11980	$0.1201 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.153	$0.156 \pm 0.054$	$D_A/\text{Gpc}$	13.8877	$13.882 \pm 0.029$
$100\theta_{\text{MC}}$	1.040757	$1.04073 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.334	$0.340 \pm 0.080$	$z_{\text{drag}}$	1059.666	$1059.63 \pm 0.30$
$\tau$	0.0798	$0.077 \pm 0.017$	$A_{217}^{\text{dust}TE}$	1.665	$1.67 \pm 0.25$	$r_{\text{drag}}$	147.265	$147.21 \pm 0.31$
$w$	-0.953	$-0.94 \pm 0.11$	$c_{100}$	0.99815	$0.99817 \pm 0.00077$	$k_D$	0.140601	$0.14064 \pm 0.00033$
$w_a$	-0.277	$-0.38^{+0.45}_{-0.36}$	$c_{217}$	0.99587	$0.9960 \pm 0.0014$	$100\theta_D$	0.160891	$0.16091 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0945	$3.089 \pm 0.033$	$H_0$	68.06	$68.1 \pm 1.1$	$z_{\text{eq}}$	3394.9	$3402 \pm 31$
$n_s$	0.96496	$0.9637 \pm 0.0046$	$\Omega_\Lambda$	0.6919	$0.6913 \pm 0.0096$	$k_{\text{eq}}$	0.010361	$0.010383 \pm 0.000096$
$y_{\text{cal}}$	1.00030	$1.0004 \pm 0.0025$	$\Omega_m$	0.3081	$0.3087 \pm 0.0096$	$100\theta_{\text{eq}}$	0.8142	$0.8129 \pm 0.0059$
$\alpha_{JLA}$	0.1411	$0.1412 \pm 0.0066$	$\Omega_m h^2$	0.14271	$0.1430 \pm 0.0013$	$100\theta_{s,\text{eq}}$	0.44992	$0.4493 \pm 0.0030$
$\beta_{JLA}$	3.102	$3.101 \pm 0.082$	$\Omega_m h^3$	0.09713	$0.0974 \pm 0.0018$	$r_{\text{drag}}/D_V(0.57)$	0.071968	$0.07199 \pm 0.00050$
$A_{217}^{\text{CIB}}$	66.0	$63.8 \pm 6.6$	$\sigma_8$	0.8408	$0.841 \pm 0.017$	$H(0.57)$	93.26	$93.26 \pm 0.55$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.16	—	$\sigma_8 \Omega_m^{0.5}$	0.4667	$0.4673 \pm 0.0090$	$D_A(0.57)$	1377.4	$1376 \pm 12$
$A_{143}^{\text{tSZ}}$	7.18	$5.3 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6264	$0.627 \pm 0.011$	$F_{\text{AP}}(0.57)$	0.67271	$0.6719^{+0.0050}_{-0.0045}$
$A_{100}^{\text{PS}}$	252.8	$260 \pm 27$	$\sigma_8/h^{0.5}$	1.0192	$1.020 \pm 0.018$	$f\sigma_8(0.57)$	0.4896	$0.491 \pm 0.012$
$A_{143}^{\text{PS}}$	40.3	$43 \pm 8$	$\langle d^2 \rangle^{1/2}$	2.5185	$2.520 \pm 0.041$	$\sigma_8(0.57)$	0.6265	$0.627 \pm 0.013$
$A_{143 \times 217}^{\text{PS}}$	37.2	$40 \pm 10$	$z_{\text{re}}$	10.13	$9.8^{+1.7}_{-1.5}$	$f_{2000}^{143}$	29.06	$29.5 \pm 2.7$
$A_{217}^{\text{PS}}$	99.3	$98 \pm 10$	$10^9 A_s$	2.208	$2.198 \pm 0.073$	$f_{2000}^{143 \times 217}$	32.04	$32.2 \pm 1.9$
$A^{\text{kSZ}}$	0.00	$< 4.07$	$10^9 A_s e^{-2\tau}$	1.8820	$1.884 \pm 0.012$	$f_{2000}^{217}$	105.63	$105.8 \pm 1.9$
$A_{100}^{\text{dust}TT}$	7.38	$7.4 \pm 1.9$	$D_{40}$	1239.1	$1242 \pm 13$	$\chi_{\text{lowTEB}}^2$	10496.89	$10497.6 \pm 2.0$
$A_{143}^{\text{dust}TT}$	8.93	$8.9 \pm 1.8$	$D_{220}$	5726.7	$5729 \pm 39$	$\chi_{\text{plik}}^2$	2431.1	$2450.2 \pm 6.7$
$A_{143 \times 217}^{\text{dust}TT}$	17.39	$16.9 \pm 4.1$	$D_{810}$	2535.3	$2536 \pm 13$	$\chi_{\text{H070p6}}^2$	0.557	$0.62 \pm 0.43$
$A_{217}^{\text{dust}TT}$	81.7	$81.6 \pm 7.4$	$D_{1420}$	814.74	$814.4 \pm 4.7$	$\chi_{\text{JLA}}^2$	695.04	$698.0 \pm 2.4$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0811 \pm 0.0056$	$D_{2000}$	230.55	$230.4 \pm 1.6$	$\chi_{6\text{DF}}^2$	0.0000	$0.07 \pm 0.10$
$A_{100 \times 143}^{\text{dust}EE}$	0.04883	$0.0486 \pm 0.0050$	$n_{s,0.002}$	0.96496	$0.9637 \pm 0.0046$	$\chi_{\text{MGS}}^2$	1.75	$1.91 \pm 0.79$
$A_{100 \times 217}^{\text{dust}EE}$	0.0997	$0.099 \pm 0.033$	$Y_P$	0.245345	$0.245331 \pm 0.000069$	$\chi_{\text{DR11CMass}}^2$	2.66	$3.4 \pm 1.2$
$A_{143}^{\text{dust}EE}$	0.1002	$0.0999 \pm 0.0069$	$Y_P^{\text{BBN}}$	0.246671	$0.246657 \pm 0.000069$	$\chi_{\text{DR11LOWZ}}^2$	0.204	$0.37 \pm 0.46$
$A_{143 \times 217}^{\text{dust}EE}$	0.2229	$0.223 \pm 0.046$	$10^5 D/H$	2.6118	$2.617 \pm 0.029$	$\chi_{\text{prior}}^2$	7.0	$19.2 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.648	$0.65 \pm 0.13$	$\text{Age/Gyr}$	13.7733	$13.771 \pm 0.033$	$\chi_{\text{CMB}}^2$	12928.0	$12947.7 \pm 6.6$
$A_{100}^{\text{dust}TE}$	0.1414	$0.141 \pm 0.038$	$z_*$	1090.039	$1090.10 \pm 0.28$	$\chi_{\text{BAO}}^2$	4.61	$5.8 \pm 1.8$
$A_{100 \times 143}^{\text{dust}TE}$	0.1309	$0.131 \pm 0.029$	$r_*$	144.565	$144.50 \pm 0.31$			

Best-fit  $\chi_{\text{eff}}^2 = 13635.20$ ;  $\bar{\chi}_{\text{eff}}^2 = 13671.28$ ;  $R - 1 = 0.01182$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 MGS: 1.75 DR11CMass: 2.66 DR11LOWZ: 0.20 CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.89 plik\_dx11dr2\_HM\_v18\_TTTEEE:  
2431.11 Hubble - H070p6: 0.56 SN - JLA December\_2013: 695.04

## 22.8 base\_w\_wa\_plikHM\_TTTEE\_lowTEB\_BAO\_H070p6\_JLA\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022269	$0.02225 \pm 0.00015$	$A_{100 \times 217}^{\text{dust}TE}$	0.303	$0.303 \pm 0.085$	$100\theta_*$	1.041069	$1.04104 \pm 0.00031$
$\Omega_c h^2$	0.11916	$0.1194 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.156	$0.156 \pm 0.054$	$D_A/\text{Gpc}$	13.9016	$13.896 \pm 0.028$
$100\theta_{\text{MC}}$	1.040870	$1.04084 \pm 0.00032$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.336 \pm 0.079$	$z_{\text{drag}}$	1059.628	$1059.62 \pm 0.30$
$\tau$	0.0625	$0.060 \pm 0.015$	$A_{217}^{\text{dust}TE}$	1.667	$1.66 \pm 0.25$	$r_{\text{drag}}$	147.427	$147.37^{+0.32}_{-0.29}$
$w$	-0.976	$-0.95^{+0.10}_{-0.12}$	$c_{100}$	0.99817	$0.99813 \pm 0.00077$	$k_D$	0.140438	$0.14048 \pm 0.00031$
$w_a$	-0.139	$-0.25^{+0.45}_{-0.33}$	$c_{217}$	0.99605	$0.9961 \pm 0.0015$	$100\theta_D$	0.160917	$0.16093 \pm 0.00018$
$\ln(10^{10} A_s)$	3.0574	$3.053 \pm 0.027$	$H_0$	67.94	$67.96^{+0.97}_{-1.1}$	$z_{\text{eq}}$	3379.8	$3386 \pm 30$
$n_s$	0.96599	$0.9649 \pm 0.0046$	$\Omega_\Lambda$	0.6922	$0.6916 \pm 0.0094$	$k_{\text{eq}}$	0.010315	$0.010335 \pm 0.000093$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0024$	$\Omega_m$	0.3078	$0.3084 \pm 0.0094$	$100\theta_{\text{eq}}$	0.8170	$0.8158 \pm 0.0058$
$\alpha_{JLA}$	0.1411	$0.1415 \pm 0.0064$	$\Omega_m h^2$	0.14208	$0.1423 \pm 0.0013$	$100\theta_{s,\text{eq}}$	0.45139	$0.4508 \pm 0.0030$
$\beta_{JLA}$	3.098	$3.102 \pm 0.082$	$\Omega_m h^3$	0.09652	$0.0967 \pm 0.0018$	$r_{\text{drag}}/D_V(0.57)$	0.07190	$0.07196 \pm 0.00052$
$A_{217}^{\text{CIB}}$	67.9	$65.2 \pm 6.4$	$\sigma_8$	0.8190	$0.820 \pm 0.013$	$H(0.57)$	93.18	$93.23 \pm 0.57$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8 \Omega_m^{0.5}$	0.4544	$0.4551 \pm 0.0061$	$D_A(0.57)$	1381.0	$1379 \pm 12$
$A_{143}^{\text{tSZ}}$	7.28	$5.2 \pm 1.9$	$\sigma_8 \Omega_m^{0.25}$	0.6101	$0.6108 \pm 0.0074$	$F_{\text{AP}}(0.57)$	0.67392	$0.6732^{+0.0050}_{-0.0042}$
$A_{100}^{\text{PS}}$	257.8	$263 \pm 27$	$\sigma_8/h^{0.5}$	0.9937	$0.994 \pm 0.011$	$f\sigma_8(0.57)$	0.4760	$0.4768 \pm 0.0097$
$A_{143}^{\text{PS}}$	38.7	$44 \pm 7$	$\langle d^2 \rangle^{1/2}$	2.4578	$2.460 \pm 0.025$	$\sigma_8(0.57)$	0.6103	$0.6109^{+0.0094}_{-0.011}$
$A_{143 \times 217}^{\text{PS}}$	32.5	$39^{+10}_{-10}$	$z_{\text{re}}$	8.50	$8.2^{+1.6}_{-1.3}$	$f_{2000}^{143}$	29.85	$30.1 \pm 2.5$
$A_{217}^{\text{PS}}$	96.5	$96 \pm 10$	$10^9 A_s$	2.127	$2.120 \pm 0.057$	$f_{2000}^{143 \times 217}$	32.56	$32.7 \pm 1.8$
$A^{\text{kSZ}}$	0.00	$< 4.59$	$10^9 A_s e^{-2\tau}$	1.8771	$1.879^{+0.012}_{-0.011}$	$f_{2000}^{217}$	106.08	$106.2 \pm 1.8$
$A_{100}^{\text{dust}TT}$	7.60	$7.5 \pm 1.8$	$D_{40}$	1228.7	$1232 \pm 11$	$\chi_{\text{lensing}}^2$	9.89	$10.7 \pm 2.0$
$A_{143}^{\text{dust}TT}$	9.11	$9.0^{+2.0}_{-1.7}$	$D_{220}$	5722.0	$5727 \pm 38$	$\chi_{\text{lowTEB}}^2$	10495.18	$10495.9 \pm 1.1$
$A_{143 \times 217}^{\text{dust}TT}$	17.64	$17.2 \pm 4.2$	$D_{810}$	2533.4	$2535 \pm 13$	$\chi_{\text{plik}}^2$	2434.8	$2453.2 \pm 6.6$
$A_{217}^{\text{dust}TT}$	81.7	$81.4 \pm 7.4$	$D_{1420}$	814.68	$814.7 \pm 4.6$	$\chi_{\text{H070p6}}^2$	0.628	$0.69 \pm 0.45$
$A_{100}^{\text{dust}EE}$	0.0814	$0.0811 \pm 0.0055$	$D_{2000}$	230.08	$230.0^{+1.6}_{-1.5}$	$\chi_{\text{JLA}}^2$	695.11	$698.0 \pm 2.3$
$A_{100 \times 143}^{\text{dust}EE}$	0.04890	$0.0490 \pm 0.0050$	$n_{s,0.002}$	0.96599	$0.9649 \pm 0.0046$	$\chi_{6\text{DF}}^2$	0.0015	$0.07 \pm 0.10$
$A_{100 \times 217}^{\text{dust}EE}$	0.0994	$0.099 \pm 0.033$	$Y_P$	0.245348	$0.245338^{+0.000074}_{-0.000067}$	$\chi_{\text{MGS}}^2$	1.61	$1.78 \pm 0.76$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1001 \pm 0.0071$	$Y_P^{\text{BBN}}$	0.246675	$0.246664^{+0.000075}_{-0.000067}$	$\chi_{\text{DR11CMass}}^2$	2.51	$3.3 \pm 1.1$
$A_{143 \times 217}^{\text{dust}EE}$	0.2231	$0.223 \pm 0.048$	$10^5 D/H$	2.6104	$2.614 \pm 0.029$	$\chi_{\text{DR11LOWZ}}^2$	0.301	$0.44 \pm 0.52$
$A_{217}^{\text{dust}EE}$	0.646	$0.66 \pm 0.13$	$\text{Age/Gyr}$	13.7852	$13.781 \pm 0.033$	$\chi_{\text{prior}}^2$	7.2	$19.2 \pm 5.6$
$A_{100}^{\text{dust}TE}$	0.1406	$0.141^{+0.037}_{-0.041}$	$z_*$	1089.975	$1090.02 \pm 0.28$	$\chi_{\text{CMB}}^2$	12939.9	$12959.8 \pm 6.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1323	$0.132 \pm 0.029$	$r_*$	144.725	$144.67 \pm 0.30$	$\chi_{\text{BAO}}^2$	4.42	$5.6 \pm 1.7$

Best-fit  $\chi_{\text{eff}}^2 = 13647.22$ ;  $\Delta\chi_{\text{eff}}^2 = -11.82$ ;  $\bar{\chi}_{\text{eff}}^2 = 13683.14$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -7.96$ ;  $R - 1 = 0.04505$

$\chi^2_{\text{eff}}$ : BAO - 6DF: 0.00 ( $\Delta$  -0.01) MGS: 1.61 ( $\Delta$  0.20) DR11CMass: 2.51 ( $\Delta$  0.10) DR11LOWZ: 0.30 ( $\Delta$  -0.18) CMB - smica\_g30\_ftl\_full\_pp: 9.89 ( $\Delta$  0.14) lowl\_SMW\_70\_dx11d\_2014\_10\_03  
10495.18 ( $\Delta$  -0.04) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2434.83 ( $\Delta$  -0.36) Hubble - H070p6: 0.63 ( $\Delta$  -0.09) SN - JLA December\_2013: 695.11 ( $\Delta$  -11.55)

## 23 yhe

### 23.1 base\_yhe\_plikHM\_TT\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022256	$0.02231 \pm 0.00034$	$\Omega_\Lambda$	0.6856	$0.688 \pm 0.016$	$100\theta_*$	1.04108	$1.04114 \pm 0.00052$
$\Omega_c h^2$	0.11974	$0.1194 \pm 0.0024$	$\Omega_m$	0.3144	$0.312 \pm 0.016$	$D_A/\text{Gpc}$	13.8871	$13.890 \pm 0.045$
$100\theta_{\text{MC}}$	1.04095	$1.04112 \pm 0.00095$	$\Omega_m h^2$	0.14264	$0.1424 \pm 0.0022$	$z_{\text{drag}}$	1059.74	$1060.0 \pm 1.3$
$\tau$	0.0773	$0.081 \pm 0.021$	$\Omega_m h^3$	0.09609	$0.09620 \pm 0.00082$	$r_{\text{drag}}$	147.278	$147.30 \pm 0.49$
$Y_P$	0.2478	$0.252 \pm 0.021$	$\sigma_8$	0.8299	$0.832 \pm 0.017$	$k_D$	0.14048	$0.14033 \pm 0.00077$
$\ln(10^{10} A_s)$	3.0895	$3.096 \pm 0.043$	$\sigma_8 \Omega_m^{0.5}$	0.4653	$0.465 \pm 0.013$	$100\theta_D$	0.16103	$0.16119 \pm 0.00077$
$n_s$	0.9666	$0.969 \pm 0.012$	$\sigma_8 \Omega_m^{0.25}$	0.6214	$0.622 \pm 0.013$	$z_{\text{eq}}$	3393	$3387 \pm 51$
$y_{\text{cal}}$	1.00039	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0111	$1.012 \pm 0.020$	$k_{\text{eq}}$	0.010357	$0.01034 \pm 0.00016$
$A_{217}^{\text{CIB}}$	67.2	$64.4 \pm 6.9$	$\langle d^2 \rangle^{1/2}$	2.4957	$2.495 \pm 0.047$	$100\theta_{\text{eq}}$	0.8146	$0.816 \pm 0.010$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.01	—	$z_{\text{re}}$	9.93	$10.1^{+2.1}_{-1.8}$	$100\theta_{\text{s,eq}}$	0.4501	$0.4509 \pm 0.0052$
$A_{143}^{\text{tSZ}}$	7.15	$5.0 \pm 2.0$	$10^9 A_s$	2.197	$2.213^{+0.088}_{-0.10}$	$r_{\text{drag}}/D_V(0.57)$	0.07142	$0.07158 \pm 0.00088$
$A_{100}^{\text{PS}}$	253.7	$260 \pm 29$	$10^9 A_s e^{-2\tau}$	1.8819	$1.882 \pm 0.015$	$H(0.57)$	92.92	$93.04^{+0.61}_{-0.69}$
$A_{143}^{\text{PS}}$	39.2	$45 \pm 9$	$D_{40}$	1234.6	$1233 \pm 21$	$D_A(0.57)$	1390.8	$1388 \pm 18$
$A_{143 \times 217}^{\text{PS}}$	33.0	$39^{+10}_{-10}$	$D_{220}$	5717.9	$5719 \pm 41$	$F_{\text{AP}}(0.57)$	0.67676	$0.6761 \pm 0.0040$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{810}$	2535.3	$2535 \pm 14$	$f\sigma_8(0.57)$	0.4832	$0.4838 \pm 0.0097$
$A^{\text{kSZ}}$	0.00	$< 4.87$	$D_{1420}$	814.7	$814.1 \pm 5.2$	$\sigma_8(0.57)$	0.6167	$0.619 \pm 0.014$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$D_{2000}$	230.24	$229.9 \pm 2.4$	$f_{2000}^{143}$	29.88	$31 \pm 4$
$A_{143}^{\text{dustTT}}$	8.97	$9.0 \pm 1.9$	$n_{\text{s},0.002}$	0.9666	$0.969 \pm 0.012$	$f_{2000}^{143 \times 217}$	32.54	$33.0 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	17.51	$17.1 \pm 4.2$	$Y_P$	0.2478	$0.252 \pm 0.021$	$f_{2000}^{217}$	106.23	$106.5 \pm 2.6$
$A_{217}^{\text{dustTT}}$	81.9	$81.7 \pm 7.4$	$Y_P^{\text{BBN}}$	0.2491	$0.253 \pm 0.021$	$\chi_{\text{lowTEB}}^2$	10496.23	$10497.3 \pm 2.7$
$c_{100}$	0.99793	$0.99787 \pm 0.00077$	Age/Gyr	13.807	$13.795 \pm 0.066$	$\chi_{\text{plik}}^2$	763.6	$778.1 \pm 5.9$
$c_{217}$	0.99598	$0.9960 \pm 0.0015$	$z_*$	1090.14	$1090.22 \pm 0.64$	$\chi_{\text{prior}}^2$	2.06	$7.4 \pm 3.6$
$H_0$	67.36	$67.6 \pm 1.3$	$r_*$	144.576	$144.61 \pm 0.48$	$\chi_{\text{CMB}}^2$	11259.9	$11275.5 \pm 5.7$

Best-fit  $\chi_{\text{eff}}^2 = 11261.91$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11282.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.02$ ;  $R - 1 = 0.00920$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.23 ( $\Delta$  -0.24) plik\_dx11dr2\_HM\_v18\_TT: 763.62 ( $\Delta$  0.25)

## 23.2 base\_yhe\_plikHM\_TT\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022346	$0.02235 \pm 0.00026$	$\Omega_m h^2$	0.14199	$0.1420 \pm 0.0012$	$k_D$	0.14023	$0.14021 \pm 0.00059$
$\Omega_c h^2$	0.11900	$0.1190 \pm 0.0013$	$\Omega_m h^3$	0.09624	$0.09627 \pm 0.00076$	$100\theta_D$	0.16123	$0.16125 \pm 0.00073$
$100\theta_{MC}$	1.04120	$1.04124 \pm 0.00075$	$\sigma_8$	0.8321	$0.833 \pm 0.017$	$z_{eq}$	3377.7	$3378 \pm 29$
$\tau$	0.0819	$0.083 \pm 0.019$	$\sigma_8 \Omega_m^{0.5}$	0.4626	$0.463 \pm 0.010$	$k_{eq}$	0.010309	$0.010309 \pm 0.000090$
$Y_P$	0.2537	$0.254 \pm 0.019$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621 \pm 0.013$	$100\theta_{eq}$	0.8179	$0.8179 \pm 0.0054$
$\ln(10^{10} A_s)$	3.0981	$3.100 \pm 0.038$	$\sigma_8/h^{0.5}$	1.0107	$1.011 \pm 0.020$	$100\theta_{s,eq}$	0.45178	$0.4518 \pm 0.0028$
$n_s$	0.9709	$0.9707 \pm 0.0087$	$\langle d^2 \rangle^{1/2}$	2.4888	$2.492 \pm 0.044$	$r_{drag}/D_V(0.57)$	0.071712	$0.07173 \pm 0.00044$
$y_{cal}$	1.00030	$1.0005 \pm 0.0025$	$z_{re}$	10.34	$10.3^{+1.8}_{-1.6}$	$H(0.57)$	93.120	$93.14 \pm 0.39$
$A_{217}^{CIB}$	67.7	$64.6 \pm 6.8$	$10^9 A_s$	2.215	$2.221 \pm 0.085$	$D_A(0.57)$	1385.0	$1384.7 \pm 9.4$
$\xi^{tSZ \times CIB}$	0.00	—	$10^9 A_s e^{-2\tau}$	1.8806	$1.882 \pm 0.015$	$F_{AP}(0.57)$	0.67541	$0.6754 \pm 0.0020$
$A_{143}^{tSZ}$	7.12	$5.0 \pm 2.0$	$D_{40}$	1227.6	$1230 \pm 17$	$f\sigma_8(0.57)$	0.4831	$0.4835 \pm 0.0097$
$A_{100}^{PS}$	257.1	$261 \pm 29$	$D_{220}$	5716.2	$5721 \pm 41$	$\sigma_8(0.57)$	0.6196	$0.620 \pm 0.013$
$A_{143}^{PS}$	40.5	$45 \pm 9$	$D_{810}$	2534.7	$2535 \pm 14$	$f_{2000}^{143}$	30.53	$31 \pm 4$
$A_{143 \times 217}^{PS}$	33.5	$39^{+10}_{-10}$	$D_{1420}$	814.2	$814.2 \pm 5.2$	$f_{2000}^{143 \times 217}$	32.98	$33.1 \pm 2.8$
$A_{217}^{PS}$	97.6	$97 \pm 10$	$D_{2000}$	229.85	$229.8 \pm 2.4$	$f_{2000}^{217}$	106.48	$106.7 \pm 2.6$
$A^{kSZ}$	0.00	$< 4.96$	$n_{s,0.002}$	0.9709	$0.9707 \pm 0.0087$	$\chi_{lowTEB}^2$	10495.83	$10496.9 \pm 2.6$
$A_{100}^{dustTT}$	7.41	$7.5 \pm 1.9$	$Y_P$	0.2537	$0.254 \pm 0.019$	$\chi_{plik}^2$	764.2	$777.9 \pm 5.9$
$A_{143}^{dustTT}$	9.10	$9.0 \pm 1.9$	$Y_P^{BBN}$	0.2551	$0.255 \pm 0.019$	$\chi_{6DF}^2$	0.0153	$0.058 \pm 0.079$
$A_{143 \times 217}^{dustTT}$	17.66	$17.2 \pm 4.2$	Age/Gyr	13.7872	$13.785 \pm 0.045$	$\chi_{MGS}^2$	1.34	$1.44 \pm 0.58$
$A_{217}^{dustTT}$	81.8	$81.7^{+8.0}_{-7.2}$	$z_*$	1090.20	$1090.22 \pm 0.64$	$\chi_{DR11CMAS}^2$	2.425	$2.91 \pm 0.71$
$c_{100}$	0.99793	$0.99788 \pm 0.00078$	$r_*$	144.679	$144.68 \pm 0.37$	$\chi_{DR11LOWZ}^2$	0.543	$0.68 \pm 0.60$
$c_{217}$	0.99595	$0.9960 \pm 0.0015$	$100\theta_*$	1.041170	$1.04120 \pm 0.00043$	$\chi_{prior}^2$	1.99	$7.5 \pm 3.6$
$H_0$	67.78	$67.80 \pm 0.66$	$D_A/Gpc$	13.8958	$13.895 \pm 0.037$	$\chi_{CMB}^2$	11260.0	$11274.8 \pm 5.5$
$\Omega_\Lambda$	0.6909	$0.6910 \pm 0.0080$	$z_{drag}$	1060.09	$1060.1 \pm 1.1$	$\chi_{BAO}^2$	4.33	$5.1 \pm 1.1$
$\Omega_m$	0.3091	$0.3090 \pm 0.0080$	$r_{drag}$	147.358	$147.36 \pm 0.42$			

Best-fit  $\chi_{eff}^2 = 11266.31$ ;  $\Delta\chi_{eff}^2 = -0.12$ ;  $\bar{\chi}_{eff}^2 = 11287.38$ ;  $\Delta\bar{\chi}_{eff}^2 = 1.01$ ;  $R - 1 = 0.01718$   
 $\chi_{eff}^2$ : BAO - 6DF: 0.01 ( $\Delta$  -0.01) MGS: 1.34 ( $\Delta$  0.06) DR11CMAS: 2.42 ( $\Delta$  -0.03) DR11LOWZ: 0.54 ( $\Delta$  -0.07) CMB - lowl.SMW\_70.dx11d.2014.10.03\_v5c\_Ap: 10495.83  
( $\Delta$  -0.59) plik\_dx11dr2\_HM\_v18\_TT: 764.16 ( $\Delta$  0.56)

### 23.3 base\_yhe\_plikHM\_TT\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022332	$0.02236 \pm 0.00032$	$\Omega_m$	0.3104	$0.309 \pm 0.014$	$z_{\text{drag}}$	1059.97	$1060.1 \pm 1.3$
$\Omega_c h^2$	0.11919	$0.1190 \pm 0.0021$	$\Omega_m h^2$	0.14216	$0.1420 \pm 0.0020$	$r_{\text{drag}}$	147.333	$147.35 \pm 0.47$
$100\theta_{\text{MC}}$	1.04112	$1.04125 \pm 0.00090$	$\Omega_m h^3$	0.09621	$0.09628 \pm 0.00081$	$k_D$	0.14035	$0.14022 \pm 0.00073$
$\tau$	0.0818	$0.083 \pm 0.021$	$\sigma_8$	0.8321	$0.833^{+0.016}_{-0.018}$	$100\theta_D$	0.16111	$0.16125 \pm 0.00076$
$Y_P$	0.2511	$0.254 \pm 0.021$	$\sigma_8 \Omega_m^{0.5}$	0.4636	$0.463 \pm 0.013$	$z_{\text{eq}}$	3381.8	$3377 \pm 47$
$\ln(10^{10} A_s)$	3.0977	$3.100 \pm 0.042$	$\sigma_8 \Omega_m^{0.25}$	0.6211	$0.621 \pm 0.013$	$k_{\text{eq}}$	0.010322	$0.01031 \pm 0.00014$
$n_s$	0.9695	$0.971 \pm 0.012$	$\sigma_8/h^{0.5}$	1.0115	$1.011 \pm 0.020$	$100\theta_{\text{eq}}$	0.8170	$0.8181 \pm 0.0093$
$y_{\text{cal}}$	1.00032	$1.0004 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4935	$2.491 \pm 0.046$	$100\theta_{s,\text{eq}}$	0.45135	$0.4519 \pm 0.0047$
$A_{217}^{\text{CIB}}$	67.3	$64.6 \pm 6.8$	$z_{\text{re}}$	10.33	$10.3^{+2.0}_{-1.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07164	$0.07174 \pm 0.00080$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.215	$2.223^{+0.088}_{-0.10}$	$H(0.57)$	93.07	$93.16 \pm 0.59$
$A_{143}^{\text{tSZ}}$	7.24	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882 \pm 0.015$	$D_A(0.57)$	1386.5	$1384 \pm 16$
$A_{100}^{\text{PS}}$	252.5	$260 \pm 29$	$D_{40}$	1230.5	$1230 \pm 20$	$F_{\text{AP}}(0.57)$	0.67576	$0.6754 \pm 0.0036$
$A_{143}^{\text{PS}}$	39.2	$45 \pm 9$	$D_{220}$	5717.9	$5721 \pm 41$	$f\sigma_8(0.57)$	0.4835	$0.4835 \pm 0.0097$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39^{+10}_{-10}$	$D_{810}$	2534.8	$2535 \pm 14$	$\sigma_8(0.57)$	0.6193	$0.620^{+0.013}_{-0.015}$
$A_{217}^{\text{PS}}$	97.6	$97 \pm 10$	$D_{1420}$	814.6	$814.2 \pm 5.2$	$f_{2000}^{143}$	29.98	$31 \pm 4$
$A^{\text{kSZ}}$	0.01	$< 4.97$	$D_{2000}$	230.16	$229.8 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.59	$33.1 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.52	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9695	$0.971 \pm 0.012$	$f_{2000}^{217}$	106.22	$106.6 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.15	$9.1 \pm 1.9$	$Y_P$	0.2511	$0.254 \pm 0.021$	$\chi_{\text{lowTEB}}^2$	10496.12	$10497.1 \pm 2.7$
$A_{143 \times 217}^{\text{dustTT}}$	17.70	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.2524	$0.255 \pm 0.021$	$\chi_{\text{plik}}^2$	763.7	$778.2 \pm 6.0$
$A_{217}^{\text{dustTT}}$	81.8	$81.7 \pm 7.4$	$\text{Age/Gyr}$	13.792	$13.784 \pm 0.062$	$\chi_{\text{JLA}}^2$	706.718	$706.85 \pm 0.44$
$c_{100}$	0.99792	$0.99788 \pm 0.00078$	$z_*$	1090.13	$1090.22 \pm 0.64$	$\chi_{\text{prior}}^2$	2.10	$7.5 \pm 3.6$
$c_{217}$	0.99591	$0.9960 \pm 0.0015$	$r_*$	144.651	$144.68 \pm 0.46$	$\chi_{\text{CMB}}^2$	11259.8	$11275.3 \pm 5.6$
$H_0$	67.67	$67.8 \pm 1.1$	$100\theta_*$	1.04116	$1.04120 \pm 0.00050$			
$\Omega_\Lambda$	0.6896	$0.691 \pm 0.014$	$D_A/\text{Gpc}$	13.8933	$13.895 \pm 0.043$			

Best-fit  $\chi_{\text{eff}}^2 = 11968.66$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 11989.60$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.00$ ;  $R - 1 = 0.01367$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.12 ( $\Delta$  -0.32) plik\_dx11dr2\_HM\_v18\_TT: 763.71 ( $\Delta$  0.29) SN - JLA December\_2013: 706.72 ( $\Delta$  -0.05)

### 23.4 base\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022298	$0.02232 \pm 0.00033$	$\Omega_m$	0.3063	$0.306 \pm 0.015$	$z_{\text{drag}}$	1059.74	$1059.9 \pm 1.3$
$\Omega_c h^2$	0.11839	$0.1183 \pm 0.0022$	$\Omega_m h^2$	0.14133	$0.1413 \pm 0.0020$	$r_{\text{drag}}$	147.591	$147.58 \pm 0.46$
$100\theta_{\text{MC}}$	1.04113	$1.04122 \pm 0.00092$	$\Omega_m h^3$	0.09601	$0.09607 \pm 0.00080$	$k_D$	0.14019	$0.14008 \pm 0.00073$
$\tau$	0.0681	$0.068 \pm 0.018$	$\sigma_8$	0.8169	$0.817^{+0.011}_{-0.013}$	$100\theta_D$	0.16104	$0.16118 \pm 0.00076$
$Y_P$	0.2476	$0.251 \pm 0.021$	$\sigma_8 \Omega_m^{0.5}$	0.4521	$0.4517 \pm 0.0090$	$z_{\text{eq}}$	3362.0	$3361 \pm 48$
$\ln(10^{10} A_s)$	3.0671	$3.067^{+0.034}_{-0.037}$	$\sigma_8 \Omega_m^{0.25}$	0.6077	$0.6074 \pm 0.0077$	$k_{\text{eq}}$	0.010261	$0.01026 \pm 0.00015$
$n_s$	0.9694	$0.970 \pm 0.012$	$\sigma_8/h^{0.5}$	0.9911	$0.991 \pm 0.011$	$100\theta_{\text{eq}}$	0.8205	$0.8209^{+0.0092}_{-0.010}$
$y_{\text{cal}}$	1.00013	$1.0001 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4480	$2.445 \pm 0.028$	$100\theta_{s,\text{eq}}$	0.45321	$0.4534^{+0.0047}_{-0.0052}$
$A_{217}^{\text{CIB}}$	67.6	$65.1 \pm 6.8$	$z_{\text{re}}$	9.04	$9.0 \pm 1.7$	$r_{\text{drag}}/D_V(0.57)$	0.07188	$0.07193^{+0.00079}_{-0.00090}$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$10^9 A_s$	2.148	$2.150^{+0.070}_{-0.083}$	$H(0.57)$	93.13	$93.18^{+0.58}_{-0.69}$
$A_{143}^{\text{tSZ}}$	7.18	$4.9 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8742	$1.875 \pm 0.015$	$D_A(0.57)$	1383.4	$1382^{+18}_{-16}$
$A_{100}^{\text{PS}}$	255.2	$262 \pm 30$	$D_{40}$	1223.0	$1223 \pm 20$	$F_{\text{AP}}(0.57)$	0.67470	$0.6746 \pm 0.0038$
$A_{143}^{\text{PS}}$	39.8	$45 \pm 9$	$D_{220}$	5715.6	$5716 \pm 40$	$f\sigma_8(0.57)$	0.4736	$0.4734 \pm 0.0057$
$A_{143 \times 217}^{\text{PS}}$	33.0	$39 \pm 10$	$D_{810}$	2532.7	$2533 \pm 14$	$\sigma_8(0.57)$	0.6090	$0.609^{+0.011}_{-0.012}$
$A_{217}^{\text{PS}}$	97.2	$96 \pm 10$	$D_{1420}$	814.8	$814.0 \pm 5.3$	$f_{2000}^{143}$	30.24	$31 \pm 4$
$A^{\text{kSZ}}$	0.01	$< 5.28$	$D_{2000}$	230.07	$229.6 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.75	$33.3 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9694	$0.970 \pm 0.012$	$f_{2000}^{217}$	106.27	$106.8 \pm 2.6$
$A_{143}^{\text{dustTT}}$	9.11	$9.2 \pm 1.8$	$Y_P$	0.2476	$0.251 \pm 0.021$	$\chi_{\text{lensing}}^2$	9.28	$9.9 \pm 1.6$
$A_{143 \times 217}^{\text{dustTT}}$	17.77	$17.4 \pm 4.1$	$Y_P^{\text{BBN}}$	0.2490	$0.252 \pm 0.021$	$\chi_{\text{lowTEB}}^2$	10494.73	$10495.5 \pm 1.9$
$A_{217}^{\text{dustTT}}$	82.0	$81.9 \pm 7.3$	Age/Gyr	13.792	$13.787^{+0.069}_{-0.062}$	$\chi_{\text{plik}}^2$	766.3	$780.5 \pm 5.9$
$c_{100}$	0.99790	$0.99786 \pm 0.00079$	$z_*$	1089.96	$1090.08 \pm 0.63$	$\chi_{\text{prior}}^2$	2.07	$7.5 \pm 3.7$
$c_{217}$	0.99594	$0.9961 \pm 0.0015$	$r_*$	144.896	$144.89 \pm 0.45$	$\chi_{\text{CMB}}^2$	11270.3	$11285.9 \pm 5.8$
$H_0$	67.93	$68.0^{+1.1}_{-1.3}$	$100\theta_*$	1.04127	$1.04127 \pm 0.00051$			
$\Omega_\Lambda$	0.6937	$0.694 \pm 0.015$	$D_A/\text{Gpc}$	13.9154	$13.915 \pm 0.042$			

Best-fit  $\chi_{\text{eff}}^2 = 11272.42$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11293.46$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.03263$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.28 ( $\Delta$  0.10) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10494.73 ( $\Delta$  -0.13) plik\_dx11dr2\_HM\_v18.TT: 766.34 ( $\Delta$  0.01)



### 23.5 base\_yhe\_plikHM\_TT\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022382	$0.02239 \pm 0.00033$	$\Omega_m$	0.3077	$0.308 \pm 0.015$	$z_{\text{drag}}$	1060.16	$1060.3 \pm 1.3$
$\Omega_c h^2$	0.11882	$0.1188 \pm 0.0022$	$\Omega_m h^2$	0.14185	$0.1418 \pm 0.0020$	$r_{\text{drag}}$	147.365	$147.36 \pm 0.48$
$100\theta_{\text{MC}}$	1.04126	$1.04134 \pm 0.00091$	$\Omega_m h^3$	0.09630	$0.09635 \pm 0.00081$	$k_D$	0.14025	$0.14016 \pm 0.00074$
$\tau$	0.0836	$0.084 \pm 0.021$	$\sigma_8$	0.8330	$0.834^{+0.016}_{-0.018}$	$100\theta_D$	0.16119	$0.16130 \pm 0.00077$
$Y_P$	0.2537	$0.256 \pm 0.021$	$\sigma_8 \Omega_m^{0.5}$	0.4621	$0.462 \pm 0.013$	$z_{\text{eq}}$	3374.3	$3374 \pm 49$
$\ln(10^{10} A_s)$	3.1014	$3.103 \pm 0.042$	$\sigma_8 \Omega_m^{0.25}$	0.6204	$0.621 \pm 0.013$	$k_{\text{eq}}$	0.010299	$0.01030 \pm 0.00015$
$n_s$	0.9716	$0.972 \pm 0.012$	$\sigma_8/h^{0.5}$	1.0109	$1.011 \pm 0.020$	$100\theta_{\text{eq}}$	0.8186	$0.8189 \pm 0.0097$
$y_{\text{cal}}$	1.00041	$1.0005 \pm 0.0025$	$\langle d^2 \rangle^{1/2}$	2.4892	$2.490 \pm 0.047$	$100\theta_{s,\text{eq}}$	0.45215	$0.4523 \pm 0.0049$
$A_{217}^{\text{CIB}}$	67.2	$64.6 \pm 6.8$	$z_{\text{re}}$	10.48	$10.5^{+2.0}_{-1.8}$	$r_{\text{drag}}/D_V(0.57)$	0.07179	$0.07183 \pm 0.00084$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.02	—	$10^9 A_s$	2.223	$2.229^{+0.089}_{-0.10}$	$H(0.57)$	93.18	$93.22 \pm 0.61$
$A_{143}^{\text{tSZ}}$	7.16	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	1.8805	$1.882 \pm 0.015$	$D_A(0.57)$	1383.4	$1383 \pm 16$
$A_{100}^{\text{PS}}$	253.7	$261 \pm 29$	$D_{40}$	1227.2	$1228 \pm 21$	$F_{\text{AP}}(0.57)$	0.67507	$0.6750 \pm 0.0038$
$A_{143}^{\text{PS}}$	40.0	$45 \pm 9$	$D_{220}$	5719.1	$5722 \pm 41$	$f\sigma_8(0.57)$	0.4833	$0.4835 \pm 0.0098$
$A_{143 \times 217}^{\text{PS}}$	33.5	$40 \pm 10$	$D_{810}$	2535.6	$2535 \pm 14$	$\sigma_8(0.57)$	0.6206	$0.621^{+0.014}_{-0.015}$
$A_{217}^{\text{PS}}$	97.8	$97 \pm 10$	$D_{1420}$	814.9	$814.2 \pm 5.2$	$f_{2000}^{143}$	30.12	$31 \pm 4$
$A^{\text{kSZ}}$	0.00	$< 5.02$	$D_{2000}$	230.16	$229.8 \pm 2.4$	$f_{2000}^{143 \times 217}$	32.70	$33.2 \pm 2.9$
$A_{100}^{\text{dustTT}}$	7.50	$7.5 \pm 1.9$	$n_{s,0.002}$	0.9716	$0.972 \pm 0.012$	$f_{2000}^{217}$	106.34	$106.7 \pm 2.6$
$A_{143}^{\text{dustTT}}$	8.96	$9.1 \pm 1.9$	$Y_P$	0.2537	$0.256 \pm 0.021$	$\chi_{\text{lowTEB}}^2$	10495.90	$10497.1 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.77	$17.2 \pm 4.2$	$Y_P^{\text{BBN}}$	0.2550	$0.257 \pm 0.021$	$\chi_{\text{plik}}^2$	764.0	$778.3 \pm 6.0$
$A_{217}^{\text{dustTT}}$	82.3	$81.7 \pm 7.4$	Age/Gyr	13.781	$13.778 \pm 0.063$	$\chi_{\text{H070p6}}^2$	0.664	$0.76 \pm 0.58$
$c_{100}$	0.99791	$0.99788 \pm 0.00078$	$z_*$	1090.14	$1090.23 \pm 0.64$	$\chi_{\text{prior}}^2$	2.12	$7.5 \pm 3.6$
$c_{217}$	0.99603	$0.9960 \pm 0.0015$	$r_*$	144.698	$144.69 \pm 0.47$	$\chi_{\text{CMB}}^2$	11259.9	$11275.4 \pm 5.7$
$H_0$	67.89	$68.0 \pm 1.2$	$100\theta_*$	1.04123	$1.04124 \pm 0.00051$			
$\Omega_\Lambda$	0.6923	$0.692 \pm 0.015$	$D_A/\text{Gpc}$	13.8969	$13.896 \pm 0.044$			

Best-fit  $\chi_{\text{eff}}^2 = 11262.68$ ;  $\Delta\chi_{\text{eff}}^2 = -0.14$ ;  $\bar{\chi}_{\text{eff}}^2 = 11283.62$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.93$ ;  $R - 1 = 0.01383$

$\chi_{\text{eff}}^2$ : CMB - lowl.SMW\_70\_dx11d.2014.10.03.v5c.Ap: 10495.90 ( $\Delta$  -0.43) plik\_dx11dr2\_HM\_v18\_TT: 763.99 ( $\Delta$  0.33) Hubble - H070p6: 0.66 ( $\Delta$  -0.16)

### 23.6 base\_yhe\_plikHM\_TT\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022319	$0.02232 \pm 0.00025$	$\Omega_m h^3$	0.09608	$0.09610 \pm 0.00073$	$z_{\text{eq}}$	3361.6	$3362 \pm 28$
$\Omega_c h^2$	0.11835	$0.1184 \pm 0.0012$	$\sigma_8$	0.8166	$0.817 \pm 0.010$	$k_{\text{eq}}$	0.010260	$0.010261 \pm 0.000085$
$100\theta_{\text{MC}}$	1.04120	$1.04124 \pm 0.00073$	$\sigma_8 \Omega_m^{0.5}$	0.4515	$0.4517 \pm 0.0066$	$100\theta_{\text{eq}}$	0.8207	$0.8207 \pm 0.0052$
$\tau$	0.0676	$0.068 \pm 0.013$	$\sigma_8 \Omega_m^{0.25}$	0.6072	$0.6075 \pm 0.0074$	$100\theta_{\text{s,eq}}$	0.45329	$0.4533 \pm 0.0027$
$Y_{\text{P}}$	0.2498	$0.251^{+0.020}_{-0.017}$	$\sigma_8/h^{0.5}$	0.9903	$0.991 \pm 0.012$	$r_{\text{drag}}/D_{\text{V}}(0.57)$	0.071913	$0.07192 \pm 0.00043$
$\ln(10^{10} A_{\text{s}})$	3.0660	$3.067 \pm 0.025$	$\langle d^2 \rangle^{1/2}$	2.4440	$2.445 \pm 0.027$	$H(0.57)$	93.168	$93.18 \pm 0.38$
$n_{\text{s}}$	0.9704	$0.9704 \pm 0.0083$	$z_{\text{re}}$	8.99	$9.0^{+1.4}_{-1.1}$	$D_{\text{A}}(0.57)$	1382.5	$1382.4 \pm 9.0$
$y_{\text{cal}}$	0.99990	$1.0002 \pm 0.0025$	$10^9 A_{\text{s}}$	2.146	$2.148 \pm 0.054$	$F_{\text{AP}}(0.57)$	0.67456	$0.6746 \pm 0.0019$
$A_{217}^{\text{CIB}}$	68.1	$65.2 \pm 6.7$	$10^9 A_{\text{s}} e^{-2\tau}$	1.8743	$1.876 \pm 0.014$	$f\sigma_8(0.57)$	0.4733	$0.4735 \pm 0.0057$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$D_{40}$	1220.7	$1222^{+16}_{-18}$	$\sigma_8(0.57)$	0.6089	$0.6092 \pm 0.0085$
$A_{143}^{\text{tSZ}}$	7.18	$4.9 \pm 2.0$	$D_{220}$	5713.2	$5718 \pm 40$	$f_{2000}^{143}$	30.49	$31 \pm 4$
$A_{100}^{\text{PS}}$	255.9	$262 \pm 29$	$D_{810}$	2532.1	$2533 \pm 14$	$f_{2000}^{143 \times 217}$	33.01	$33.4 \pm 2.8$
$A_{143}^{\text{PS}}$	40.3	$45 \pm 9$	$D_{1420}$	814.4	$814.0 \pm 5.3$	$f_{2000}^{217}$	106.42	$106.8 \pm 2.6$
$A_{143 \times 217}^{\text{PS}}$	33.3	$38^{+10}_{-10}$	$D_{2000}$	229.79	$229.5 \pm 2.4$	$\chi_{\text{lensing}}^2$	9.17	$9.9 \pm 1.5$
$A_{217}^{\text{PS}}$	96.8	$96 \pm 10$	$n_{\text{s},0.002}$	0.9704	$0.9704 \pm 0.0083$	$\chi_{\text{lowTEB}}^2$	10494.54	$10495.1 \pm 1.5$
$A^{\text{kSZ}}$	0.01	$< 5.34$	$Y_{\text{P}}$	0.2498	$0.251^{+0.020}_{-0.017}$	$\chi_{\text{plik}}^2$	766.6	$780.2 \pm 5.7$
$A_{100}^{\text{dustTT}}$	7.37	$7.5 \pm 1.9$	$Y_{\text{P}}^{\text{BBN}}$	0.2512	$0.253^{+0.020}_{-0.018}$	$\chi_{\text{H070p6}}^2$	0.620	$0.65 \pm 0.30$
$A_{143}^{\text{dustTT}}$	9.15	$9.2 \pm 1.9$	Age/Gyr	13.7871	$13.786 \pm 0.044$	$\chi_{\text{JLA}}^2$	706.608	$706.66 \pm 0.17$
$A_{143 \times 217}^{\text{dustTT}}$	17.87	$17.4 \pm 4.1$	$z_*$	1090.02	$1090.10 \pm 0.62$	$\chi_{6\text{DF}}^2$	0.00099	$0.041 \pm 0.058$
$A_{217}^{\text{dustTT}}$	81.9	$81.9 \pm 7.3$	$r_*$	144.881	$144.87 \pm 0.36$	$\chi_{\text{MGS}}^2$	1.61	$1.69 \pm 0.59$
$c_{100}$	0.99790	$0.99788 \pm 0.00080$	$100\theta_*$	1.041279	$1.04127 \pm 0.00042$	$\chi_{\text{DR11CMass}}^2$	2.436	$2.88 \pm 0.67$
$c_{217}$	0.99601	$0.9961 \pm 0.0015$	$D_{\text{A}}/\text{Gpc}$	13.9138	$13.913 \pm 0.036$	$\chi_{\text{DR11LOWZ}}^2$	0.321	$0.45 \pm 0.46$
$H_0$	67.99	$68.00 \pm 0.63$	$z_{\text{drag}}$	1059.86	$1059.9 \pm 1.1$	$\chi_{\text{prior}}^2$	2.09	$7.6 \pm 3.7$
$\Omega_{\Lambda}$	0.6943	$0.6942 \pm 0.0075$	$r_{\text{drag}}$	147.571	$147.56 \pm 0.40$	$\chi_{\text{CMB}}^2$	11270.4	$11285.2 \pm 5.7$
$\Omega_{\text{m}}$	0.3057	$0.3058 \pm 0.0075$	$k_{\text{D}}$	0.14014	$0.14008 \pm 0.00058$	$\chi_{\text{BAO}}^2$	4.37	$5.1 \pm 1.0$
$\Omega_{\text{m}} h^2$	0.14132	$0.1413 \pm 0.0012$	$100\theta_{\text{D}}$	0.16112	$0.16120 \pm 0.00071$			

Best-fit  $\chi_{\text{eff}}^2 = 11984.04$ ;  $\Delta\chi_{\text{eff}}^2 = -0.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 12005.15$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.13$ ;  $R - 1 = 0.04133$   
 $\chi_{\text{eff}}^2$ : BAO - 6DF: 0.00 ( $\Delta$  -0.00) MGS: 1.61 ( $\Delta$  0.07) DR11CMass: 2.44 ( $\Delta$  0.02) DR11LOWZ: 0.32 ( $\Delta$  -0.05) CMB - smica\_g30\_ftl\_full\_pp: 9.17 ( $\Delta$  -0.09) lowl\_SMW\_70\_dx11d\_2014\_10\_03: 10494.54 ( $\Delta$  -0.38) plik\_dx11dr2\_HM\_v18\_TT: 766.64 ( $\Delta$  0.51) Hubble - H070p6: 0.62 ( $\Delta$  -0.05) SN - JLA December\_2013: 706.61 ( $\Delta$  -0.02)

### 23.7 base\_yhe\_plikHM\_TT\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232^{+0.00032}_{-0.00036}$	$\Omega_\Lambda$	$0.688 \pm 0.016$	$100\theta_*$	$1.04115 \pm 0.00052$
$\Omega_c h^2$	$0.1194 \pm 0.0023$	$\Omega_m$	$0.312 \pm 0.016$	$D_A/\text{Gpc}$	$13.890 \pm 0.045$
$100\theta_{\text{MC}}$	$1.04114 \pm 0.00093$	$\Omega_m h^2$	$0.1423 \pm 0.0021$	$z_{\text{drag}}$	$1060.0 \pm 1.3$
$\tau$	$0.082^{+0.018}_{-0.023}$	$\Omega_m h^3$	$0.09622 \pm 0.00082$	$r_{\text{drag}}$	$147.30 \pm 0.49$
$Y_P$	$0.252 \pm 0.021$	$\sigma_8$	$0.833^{+0.014}_{-0.018}$	$k_D$	$0.14032 \pm 0.00077$
$\ln(10^{10} A_s)$	$3.099^{+0.036}_{-0.046}$	$\sigma_8 \Omega_m^{0.5}$	$0.465 \pm 0.013$	$100\theta_D$	$0.16120 \pm 0.00077$
$n_s$	$0.969 \pm 0.012$	$\sigma_8 \Omega_m^{0.25}$	$0.622 \pm 0.013$	$z_{\text{eq}}$	$3386 \pm 51$
$y_{\text{cal}}$	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	$1.013 \pm 0.019$	$k_{\text{eq}}$	$0.01033 \pm 0.00016$
$A_{217}^{\text{CIB}}$	$64.4 \pm 6.8$	$\langle d^2 \rangle^{1/2}$	$2.498 \pm 0.046$	$100\theta_{\text{eq}}$	$0.816 \pm 0.010$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$z_{\text{re}}$	$10.3 \pm 1.7$	$100\theta_{\text{s,eq}}$	$0.4511 \pm 0.0051$
$A_{143}^{\text{tSZ}}$	$5.0 \pm 2.0$	$10^9 A_s$	$2.220^{+0.076}_{-0.11}$	$r_{\text{drag}}/D_V(0.57)$	$0.07160 \pm 0.00087$
$A_{100}^{\text{PS}}$	$260 \pm 29$	$10^9 A_s e^{-2\tau}$	$1.882 \pm 0.015$	$H(0.57)$	$93.06^{+0.60}_{-0.68}$
$A_{143}^{\text{PS}}$	$45 \pm 9$	$D_{40}$	$1233 \pm 21$	$D_A(0.57)$	$1387 \pm 17$
$A_{143 \times 217}^{\text{PS}}$	$39^{+10}_{-10}$	$D_{220}$	$5719 \pm 41$	$F_{\text{AP}}(0.57)$	$0.6760 \pm 0.0040$
$A_{217}^{\text{PS}}$	$97 \pm 10$	$D_{810}$	$2535 \pm 14$	$f\sigma_8(0.57)$	$0.4843 \pm 0.0093$
$A^{\text{kSZ}}$	$< 4.91$	$D_{1420}$	$814.1 \pm 5.3$	$\sigma_8(0.57)$	$0.620^{+0.012}_{-0.015}$
$A_{100}^{\text{dustTT}}$	$7.5 \pm 1.9$	$D_{2000}$	$229.9 \pm 2.4$	$f_{2000}^{143}$	$31 \pm 4$
$A_{143}^{\text{dustTT}}$	$9.1 \pm 1.9$	$n_{\text{s},0.002}$	$0.969 \pm 0.012$	$f_{2000}^{143 \times 217}$	$33.0 \pm 2.9$
$A_{143 \times 217}^{\text{dustTT}}$	$17.1 \pm 4.2$	$Y_P$	$0.252 \pm 0.021$	$f_{2000}^{217}$	$106.5 \pm 2.7$
$A_{217}^{\text{dustTT}}$	$81.7 \pm 7.5$	$Y_P^{\text{BBN}}$	$0.254 \pm 0.021$	$\chi_{\text{lowTEB}}^2$	$10497.3 \pm 2.7$
$c_{100}$	$0.99788 \pm 0.00078$	$\text{Age}/\text{Gyr}$	$13.793 \pm 0.065$	$\chi_{\text{plik}}^2$	$778.0 \pm 5.9$
$c_{217}$	$0.9960 \pm 0.0015$	$z_*$	$1090.22 \pm 0.64$	$\chi_{\text{prior}}^2$	$7.4 \pm 3.6$
$H_0$	$67.6 \pm 1.2$	$r_*$	$144.61 \pm 0.48$	$\chi_{\text{CMB}}^2$	$11275.3 \pm 5.6$

$$\bar{\chi}_{\text{eff}}^2 = 11282.69; \Delta\bar{\chi}_{\text{eff}}^2 = 1.05; R - 1 = 0.01267$$

### 23.8 base\_yhe\_plikHM\_TTTEEE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022302	$0.02230 \pm 0.00023$	$A_{100 \times 143}^{\text{dustTE}}$	0.1313	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	0.2504	$0.251 \pm 0.014$
$\Omega_c h^2$	0.11969	$0.1197 \pm 0.0015$	$A_{100 \times 217}^{\text{dustTE}}$	0.306	$0.303 \pm 0.085$	Age/Gyr	13.8031	$13.802 \pm 0.042$
$100\theta_{\text{MC}}$	1.04092	$1.04096 \pm 0.00060$	$A_{143}^{\text{dustTE}}$	0.154	$0.155 \pm 0.054$	$z_*$	1090.131	$1090.18 \pm 0.44$
$\tau$	0.0828	$0.082 \pm 0.018$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.338 \pm 0.080$	$r_*$	144.549	$144.53 \pm 0.33$
$Y_P$	0.2491	$0.250 \pm 0.014$	$A_{217}^{\text{dustTE}}$	1.664	$1.67 \pm 0.25$	$100\theta_*$	1.041013	$1.04102 \pm 0.00034$
$\ln(10^{10} A_s)$	3.1010	$3.099 \pm 0.036$	$c_{100}$	0.99818	$0.99815 \pm 0.00078$	$D_A/\text{Gpc}$	13.8854	$13.884 \pm 0.031$
$n_s$	0.9668	$0.9668 \pm 0.0080$	$c_{217}$	0.99595	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	1059.89	$1059.93 \pm 0.87$
$y_{\text{cal}}$	1.00027	$1.0005 \pm 0.0025$	$H_0$	67.40	$67.41 \pm 0.77$	$r_{\text{drag}}$	147.235	$147.22 \pm 0.34$
$A_{217}^{\text{CIB}}$	66.3	$64.2 \pm 6.6$	$\Omega_\Lambda$	0.6860	$0.6858 \pm 0.0098$	$k_D$	0.140513	$0.14048 \pm 0.00043$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.13	—	$\Omega_m$	0.3140	$0.3142 \pm 0.0098$	$100\theta_D$	0.161018	$0.16107 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	7.18	$5.3 \pm 1.9$	$\Omega_m h^2$	0.14264	$0.1427 \pm 0.0014$	$z_{\text{eq}}$	3393.3	$3394 \pm 33$
$A_{100}^{\text{PS}}$	255.3	$262 \pm 28$	$\Omega_m h^3$	0.09615	$0.09617 \pm 0.00057$	$k_{\text{eq}}$	0.010357	$0.010360 \pm 0.000099$
$A_{143}^{\text{PS}}$	40.8	$44 \pm 8$	$\sigma_8$	0.8344	$0.834 \pm 0.015$	$100\theta_{\text{eq}}$	0.8147	$0.8146 \pm 0.0063$
$A_{143 \times 217}^{\text{PS}}$	36.9	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	0.4675	$0.4672 \pm 0.0098$	$100\theta_{s,\text{eq}}$	0.45017	$0.4501 \pm 0.0032$
$A_{217}^{\text{PS}}$	99.2	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6245	$0.624 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	0.07143	$0.07144 \pm 0.00053$
$A^{\text{kSZ}}$	0.00	$< 4.38$	$\sigma_8/h^{0.5}$	1.0163	$1.015 \pm 0.017$	$H(0.57)$	92.948	$92.96 \pm 0.39$
$A_{100}^{\text{dustTT}}$	7.46	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	2.5090	$2.507 \pm 0.039$	$D_A(0.57)$	1390.1	$1390 \pm 11$
$A_{143}^{\text{dustTT}}$	8.98	$9.0 \pm 1.8$	$z_{\text{re}}$	10.42	$10.3_{-1.5}^{+1.8}$	$F_{\text{AP}}(0.57)$	0.67665	$0.6767 \pm 0.0025$
$A_{143 \times 217}^{\text{dustTT}}$	17.66	$17.1 \pm 4.1$	$10^9 A_s$	2.222	$2.219 \pm 0.079$	$f\sigma_8(0.57)$	0.4857	$0.4854 \pm 0.0084$
$A_{217}^{\text{dustTT}}$	82.0	$81.7 \pm 7.4$	$10^9 A_s e^{-2\tau}$	1.8831	$1.884 \pm 0.013$	$\sigma_8(0.57)$	0.6201	$0.620 \pm 0.012$
$A_{100}^{\text{dustEE}}$	0.0812	$0.0812 \pm 0.0057$	$D_{40}$	1237.8	$1239 \pm 16$	$f_{2000}^{143}$	29.49	$30.1 \pm 3.0$
$A_{100 \times 143}^{\text{dustEE}}$	0.04878	$0.0488 \pm 0.0050$	$D_{220}$	5725.6	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	32.37	$32.7 \pm 2.2$
$A_{100 \times 217}^{\text{dustEE}}$	0.0987	$0.099 \pm 0.033$	$D_{810}$	2535.9	$2536 \pm 14$	$f_{2000}^{217}$	105.94	$106.2 \pm 2.1$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1002 \pm 0.0069$	$D_{1420}$	814.58	$814.3 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10496.98	$10497.6 \pm 2.3$
$A_{143 \times 217}^{\text{dustEE}}$	0.2238	$0.223 \pm 0.047$	$D_{2000}$	230.27	$230.1 \pm 1.8$	$\chi_{\text{plik}}^2$	2431.5	$2451.3 \pm 7.0$
$A_{217}^{\text{dustEE}}$	0.644	$0.65 \pm 0.13$	$n_{s,0.002}$	0.9668	$0.9668 \pm 0.0080$	$\chi_{\text{prior}}^2$	7.0	$19.4 \pm 5.5$
$A_{100}^{\text{dustTE}}$	0.1412	$0.141 \pm 0.038$	$Y_P$	0.2491	$0.250 \pm 0.014$	$\chi_{\text{CMB}}^2$	12928.5	$12949.0 \pm 6.8$

Best-fit  $\chi_{\text{eff}}^2 = 12935.48$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12968.35$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.66$ ;  $R - 1 = 0.00815$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.98 ( $\Delta$  0.04) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.52 ( $\Delta$  -0.13)

### 23.9 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_BAO

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022350	$0.02236 \pm 0.00019$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$100\theta_*$	1.041069	$1.04109 \pm 0.00030$
$\Omega_c h^2$	0.11918	$0.1192 \pm 0.0011$	$A_{143 \times 217}^{\text{dust}TE}$	0.338	$0.339 \pm 0.079$	$D_A/\text{Gpc}$	13.8941	$13.890 \pm 0.028$
$100\theta_{\text{MC}}$	1.04098	$1.04108 \pm 0.00054$	$A_{217}^{\text{dust}TE}$	1.662	$1.66 \pm 0.25$	$z_{\text{drag}}$	1059.93	$1060.07 \pm 0.80$
$\tau$	0.0871	$0.084 \pm 0.017$	$c_{100}$	0.99820	$0.99816 \pm 0.00077$	$r_{\text{drag}}$	147.322	$147.29 \pm 0.31$
$Y_P$	0.2488	$0.252 \pm 0.013$	$c_{217}$	0.99588	$0.9960 \pm 0.0014$	$k_D$	0.140469	$0.14039 \pm 0.00037$
$\ln(10^{10} A_s)$	3.1085	$3.104 \pm 0.034$	$H_0$	67.64	$67.66 \pm 0.54$	$100\theta_D$	0.160968	$0.16111 \pm 0.00048$
$n_s$	0.9685	$0.9687 \pm 0.0068$	$\Omega_\Lambda$	0.6893	$0.6892 \pm 0.0067$	$z_{\text{eq}}$	3382.0	$3384 \pm 24$
$y_{\text{cal}}$	1.00016	$1.0005 \pm 0.0025$	$\Omega_m$	0.3107	$0.3108 \pm 0.0067$	$k_{\text{eq}}$	0.010322	$0.010328 \pm 0.000074$
$A_{217}^{\text{CIB}}$	64.7	$64.2 \pm 6.6$	$\Omega_m h^2$	0.14217	$0.1423 \pm 0.0010$	$100\theta_{\text{eq}}$	0.81690	$0.8167 \pm 0.0045$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.33	—	$\Omega_m h^3$	0.09617	$0.09625 \pm 0.00055$	$100\theta_{s,\text{eq}}$	0.45128	$0.4512 \pm 0.0023$
$A_{143}^{\text{tSZ}}$	7.06	$5.3 \pm 1.9$	$\sigma_8$	0.8361	$0.835 \pm 0.015$	$r_{\text{drag}}/D_V(0.57)$	0.071610	$0.07161 \pm 0.00037$
$A_{100}^{\text{PS}}$	252.3	$262 \pm 28$	$\sigma_8 \Omega_m^{0.5}$	0.4660	$0.4653 \pm 0.0089$	$H(0.57)$	93.049	$93.08 \pm 0.30$
$A_{143}^{\text{PS}}$	43.3	$44 \pm 8$	$\sigma_8 \Omega_m^{0.25}$	0.6242	$0.623 \pm 0.011$	$D_A(0.57)$	1386.9	$1386.6 \pm 7.6$
$A_{143 \times 217}^{\text{PS}}$	42.6	$40 \pm 10$	$\sigma_8/h^{0.5}$	1.0165	$1.015 \pm 0.017$	$F_{\text{AP}}(0.57)$	0.67583	$0.6758 \pm 0.0017$
$A_{217}^{\text{PS}}$	101.6	$98 \pm 10$	$\langle d^2 \rangle^{1/2}$	2.5092	$2.504 \pm 0.039$	$f\sigma_8(0.57)$	0.4859	$0.4851 \pm 0.0084$
$A^{\text{kSZ}}$	0.00	$< 4.39$	$z_{\text{re}}$	10.78	$10.5_{-1.4}^{+1.7}$	$\sigma_8(0.57)$	0.6221	$0.621 \pm 0.011$
$A_{100}^{\text{dust}TT}$	7.39	$7.5 \pm 1.9$	$10^9 A_s$	2.239	$2.231 \pm 0.076$	$f_{2000}^{143}$	28.85	$30.1 \pm 3.0$
$A_{143}^{\text{dust}TT}$	8.98	$9.0 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8808	$1.883 \pm 0.012$	$f_{2000}^{143 \times 217}$	31.99	$32.7 \pm 2.2$
$A_{143 \times 217}^{\text{dust}TT}$	17.84	$17.1 \pm 4.1$	$D_{40}$	1235.9	$1236 \pm 15$	$f_{2000}^{217}$	105.46	$106.2 \pm 2.1$
$A_{217}^{\text{dust}TT}$	82.1	$81.7 \pm 7.4$	$D_{220}$	5726.5	$5730 \pm 38$	$\chi_{\text{lowTEB}}^2$	10497.21	$10497.5 \pm 2.4$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0814 \pm 0.0057$	$D_{810}$	2535.7	$2536 \pm 14$	$\chi_{\text{plik}}^2$	2431.5	$2451.0 \pm 6.9$
$A_{100 \times 143}^{\text{dust}EE}$	0.0491	$0.0491 \pm 0.0050$	$D_{1420}$	815.20	$814.5 \pm 4.8$	$\chi_{6\text{DF}}^2$	0.0290	$0.059 \pm 0.072$
$A_{100 \times 217}^{\text{dust}EE}$	0.09997	$0.099 \pm 0.033$	$D_{2000}$	230.64	$230.1 \pm 1.9$	$\chi_{\text{MGS}}^2$	1.217	$1.28 \pm 0.47$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1004 \pm 0.0068$	$n_{s,0.002}$	0.9685	$0.9687 \pm 0.0068$	$\chi_{\text{DR11CMass}}^2$	2.496	$2.83 \pm 0.59$
$A_{143 \times 217}^{\text{dust}EE}$	0.2232	$0.223 \pm 0.046$	$Y_P$	0.2488	$0.252 \pm 0.013$	$\chi_{\text{DR11LOWZ}}^2$	0.678	$0.78 \pm 0.55$
$A_{217}^{\text{dust}EE}$	0.650	$0.65 \pm 0.13$	$Y_P^{\text{BBN}}$	0.2502	$0.253 \pm 0.013$	$\chi_{\text{prior}}^2$	6.8	$19.4 \pm 5.5$
$A_{100}^{\text{dust}TE}$	0.1419	$0.141 \pm 0.038$	Age/Gyr	13.7945	$13.791 \pm 0.034$	$\chi_{\text{CMB}}^2$	12928.8	$12948.5 \pm 6.7$
$A_{100 \times 143}^{\text{dust}TE}$	0.1319	$0.132 \pm 0.029$	$z_*$	1090.012	$1090.14 \pm 0.43$	$\chi_{\text{BAO}}^2$	4.420	$4.96 \pm 0.86$
$A_{100 \times 217}^{\text{dust}TE}$	0.305	$0.303 \pm 0.084$	$r_*$	144.647	$144.61 \pm 0.29$			

Best-fit  $\chi_{\text{eff}}^2 = 12940.03$ ;  $\Delta\chi_{\text{eff}}^2 = -0.13$ ;  $\bar{\chi}_{\text{eff}}^2 = 12972.84$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.37$ ;  $R - 1 = 0.01208$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.03 ( $\Delta$  0.00) MGS: 1.22 ( $\Delta$  0.00) DR11CMass: 2.50 ( $\Delta$  0.00) DR11LOWZ: 0.68 ( $\Delta$  -0.00) CMB - lowl.SMW\_70\_dx11d.2014.10.03\_v5c\_Ap: 10497.21 ( $\Delta$  -0.21) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.55 ( $\Delta$  0.01)

### 23.10 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022329	$0.02233 \pm 0.00022$	$A_{100 \times 217}^{\text{dust}TE}$	0.307	$0.303 \pm 0.084$	$z_*$	1090.096	$1090.16 \pm 0.44$
$\Omega_c h^2$	0.11946	$0.1195 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$r_*$	144.586	$144.57 \pm 0.32$
$100\theta_{\text{MC}}$	1.04095	$1.04101 \pm 0.00059$	$A_{143 \times 217}^{\text{dust}TE}$	0.339	$0.339 \pm 0.080$	$100\theta_*$	1.041025	$1.04105 \pm 0.00033$
$\tau$	0.0837	$0.083 \pm 0.018$	$A_{217}^{\text{dust}TE}$	1.670	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8888	$13.887 \pm 0.031$
$Y_P$	0.2496	$0.251 \pm 0.014$	$c_{100}$	0.99819	$0.99816 \pm 0.00077$	$z_{\text{drag}}$	1059.93	$1060.00 \pm 0.85$
$\ln(10^{10} A_s)$	3.1025	$3.102 \pm 0.035$	$c_{217}$	0.99603	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.267	$147.25 \pm 0.34$
$n_s$	0.9676	$0.9677 \pm 0.0079$	$H_0$	67.52	$67.53 \pm 0.74$	$k_D$	0.140480	$0.14044 \pm 0.00042$
$y_{\text{cal}}$	1.00028	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6875	$0.6874 \pm 0.0094$	$100\theta_D$	0.161016	$0.16109 \pm 0.00048$
$A_{217}^{\text{CIB}}$	66.3	$64.2 \pm 6.6$	$\Omega_m$	0.3125	$0.3126 \pm 0.0094$	$z_{\text{eq}}$	3388.4	$3390 \pm 32$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.14	—	$\Omega_m h^2$	0.14244	$0.1425 \pm 0.0013$	$k_{\text{eq}}$	0.010342	$0.010345 \pm 0.000096$
$A_{143}^{\text{tSZ}}$	7.16	$5.3 \pm 1.9$	$\Omega_m h^3$	0.09617	$0.09621 \pm 0.00057$	$100\theta_{\text{eq}}$	0.8157	$0.8156 \pm 0.0061$
$A_{100}^{\text{PS}}$	254.8	$262 \pm 28$	$\sigma_8$	0.8343	$0.834 \pm 0.015$	$100\theta_{s,\text{eq}}$	0.45066	$0.4506 \pm 0.0031$
$A_{143}^{\text{PS}}$	40.6	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4664	$0.4664 \pm 0.0097$	$r_{\text{drag}}/D_V(0.57)$	0.07151	$0.07152 \pm 0.00051$
$A_{143 \times 217}^{\text{PS}}$	36.9	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6238	$0.624 \pm 0.011$	$H(0.57)$	92.998	$93.02 \pm 0.38$
$A_{217}^{\text{PS}}$	99.0	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0154	$1.015 \pm 0.017$	$D_A(0.57)$	1388.6	$1388 \pm 10$
$A^{\text{kSZ}}$	0.00	$< 4.37$	$\langle d^2 \rangle^{1/2}$	2.5068	$2.506 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67627	$0.6763 \pm 0.0024$
$A_{100}^{\text{dust}TT}$	7.44	$7.5 \pm 1.9$	$z_{\text{re}}$	10.49	$10.4_{-1.5}^{+1.8}$	$f\sigma_8(0.57)$	0.4853	$0.4853 \pm 0.0084$
$A_{143}^{\text{dust}TT}$	9.01	$9.0 \pm 1.9$	$10^9 A_s$	2.225	$2.225 \pm 0.079$	$\sigma_8(0.57)$	0.6204	$0.620 \pm 0.012$
$A_{143 \times 217}^{\text{dust}TT}$	17.81	$17.1 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8823	$1.883 \pm 0.013$	$f_{2000}^{143}$	29.32	$30.1 \pm 3.0$
$A_{217}^{\text{dust}TT}$	82.3	$81.7 \pm 7.4$	$D_{40}$	1236.6	$1237 \pm 16$	$f_{2000}^{143 \times 217}$	32.30	$32.7 \pm 2.2$
$A_{100}^{\text{dust}EE}$	0.0815	$0.0813 \pm 0.0057$	$D_{220}$	5727.2	$5729 \pm 38$	$f_{2000}^{217}$	105.89	$106.2 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0488	$0.0490 \pm 0.0050$	$D_{810}$	2535.8	$2536 \pm 14$	$\chi_{\text{lowTEB}}^2$	10496.93	$10497.6 \pm 2.4$
$A_{100 \times 217}^{\text{dust}EE}$	0.0983	$0.099 \pm 0.032$	$D_{1420}$	814.70	$814.4 \pm 4.8$	$\chi_{\text{plik}}^2$	2431.5	$2451.3 \pm 7.0$
$A_{143}^{\text{dust}EE}$	0.1004	$0.1003 \pm 0.0068$	$D_{2000}$	230.32	$230.1 \pm 1.8$	$\chi_{\text{JLA}}^2$	706.777	$706.85 \pm 0.31$
$A_{143 \times 217}^{\text{dust}EE}$	0.2208	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9676	$0.9677 \pm 0.0079$	$\chi_{\text{prior}}^2$	7.1	$19.4 \pm 5.5$
$A_{217}^{\text{dust}EE}$	0.652	$0.65 \pm 0.13$	$Y_P$	0.2496	$0.251 \pm 0.014$	$\chi_{\text{CMB}}^2$	12928.4	$12948.9 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1410	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2509	$0.252 \pm 0.014$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1321	$0.132 \pm 0.029$	Age/Gyr	13.7986	$13.797 \pm 0.041$			

Best-fit  $\chi_{\text{eff}}^2 = 13642.28$ ;  $\Delta\chi_{\text{eff}}^2 = -0.12$ ;  $\bar{\chi}_{\text{eff}}^2 = 13675.08$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.44$ ;  $R - 1 = 0.01066$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10496.93 ( $\Delta$  -0.43) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.48 ( $\Delta$  -0.13) SN - JLA December\_2013: 706.78 ( $\Delta$  -0.08)

### 23.11 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_lensing

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022271	$0.02228 \pm 0.00023$	$A_{100 \times 217}^{\text{dust}TE}$	0.306	$0.302 \pm 0.083$	$z_*$	1090.006	$1090.04 \pm 0.44$
$\Omega_c h^2$	0.11924	$0.1192 \pm 0.0014$	$A_{143}^{\text{dust}TE}$	0.154	$0.155 \pm 0.054$	$r_*$	144.701	$144.70 \pm 0.31$
$100\theta_{\text{MC}}$	1.04087	$1.04093 \pm 0.00059$	$A_{143 \times 217}^{\text{dust}TE}$	0.340	$0.340 \pm 0.082$	$100\theta_*$	1.041049	$1.04108 \pm 0.00033$
$\tau$	0.0629	$0.063 \pm 0.014$	$A_{217}^{\text{dust}TE}$	1.665	$1.66 \pm 0.25$	$D_A/\text{Gpc}$	13.8995	$13.899 \pm 0.030$
$Y_P$	0.2460	$0.247 \pm 0.014$	$c_{100}$	0.99818	$0.99816 \pm 0.00077$	$z_{\text{drag}}$	1059.67	$1059.71 \pm 0.87$
$\ln(10^{10} A_s)$	3.0584	$3.060 \pm 0.027$	$c_{217}$	0.99604	$0.9960 \pm 0.0015$	$r_{\text{drag}}$	147.401	$147.40 \pm 0.32$
$n_s$	0.9659	$0.9662 \pm 0.0080$	$H_0$	67.52	$67.56 \pm 0.76$	$k_D$	0.140440	$0.14041 \pm 0.00042$
$y_{\text{cal}}$	0.99999	$1.0001 \pm 0.0024$	$\Omega_\Lambda$	0.6882	$0.6884 \pm 0.0096$	$100\theta_D$	0.160939	$0.16098 \pm 0.00048$
$A_{217}^{\text{CIB}}$	67.8	$64.6 \pm 6.6$	$\Omega_m$	0.3118	$0.3116 \pm 0.0096$	$z_{\text{eq}}$	3381.7	$3381 \pm 32$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\Omega_m h^2$	0.14216	$0.1421 \pm 0.0013$	$k_{\text{eq}}$	0.010321	$0.010320 \pm 0.000096$
$A_{143}^{\text{tSZ}}$	7.34	$5.2 \pm 2.0$	$\Omega_m h^3$	0.09599	$0.09602 \pm 0.00056$	$100\theta_{\text{eq}}$	0.8167	$0.8168 \pm 0.0062$
$A_{100}^{\text{PS}}$	258.6	$264 \pm 28$	$\sigma_8$	0.8150	$0.8156 \pm 0.0099$	$100\theta_{s,\text{eq}}$	0.45121	$0.4513 \pm 0.0031$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4551	$0.4552 \pm 0.0070$	$r_{\text{drag}}/D_V(0.57)$	0.07156	$0.07158 \pm 0.00053$
$A_{143 \times 217}^{\text{PS}}$	32.9	$39_{-10}^{+9}$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.6093 \pm 0.0070$	$H(0.57)$	92.958	$92.98 \pm 0.39$
$A_{217}^{\text{PS}}$	96.9	$97 \pm 10$	$\sigma_8/h^{0.5}$	0.9919	$0.992 \pm 0.011$	$D_A(0.57)$	1388.8	$1388 \pm 11$
$A^{\text{kSZ}}$	0.00	$< 4.93$	$\langle d^2 \rangle^{1/2}$	2.4539	$2.455 \pm 0.025$	$F_{\text{AP}}(0.57)$	0.67611	$0.6760 \pm 0.0024$
$A_{100}^{\text{dust}TT}$	7.46	$7.6 \pm 1.9$	$z_{\text{re}}$	8.55	$8.5 \pm 1.4$	$f\sigma_8(0.57)$	0.4740	$0.4742 \pm 0.0053$
$A_{143}^{\text{dust}TT}$	9.09	$9.1 \pm 1.9$	$10^9 A_s$	2.129	$2.133_{-0.062}^{+0.054}$	$\sigma_8(0.57)$	0.6062	$0.6068 \pm 0.0086$
$A_{143 \times 217}^{\text{dust}TT}$	17.68	$17.3 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8779	$1.879 \pm 0.012$	$f_{2000}^{143}$	30.07	$30.4 \pm 3.0$
$A_{217}^{\text{dust}TT}$	81.9	$81.7 \pm 7.3$	$D_{40}$	1229.8	$1230 \pm 15$	$f_{2000}^{143 \times 217}$	32.73	$32.9 \pm 2.2$
$A_{100}^{\text{dust}EE}$	0.0813	$0.0814 \pm 0.0057$	$D_{220}$	5723.1	$5725 \pm 38$	$f_{2000}^{217}$	106.22	$106.3 \pm 2.1$
$A_{100 \times 143}^{\text{dust}EE}$	0.0490	$0.0492 \pm 0.0051$	$D_{810}$	2533.7	$2534 \pm 13$	$\chi_{\text{lensing}}^2$	9.77	$10.4 \pm 1.9$
$A_{100 \times 217}^{\text{dust}EE}$	0.1002	$0.099 \pm 0.033$	$D_{1420}$	814.56	$814.5 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	10495.28	$10495.8 \pm 1.5$
$A_{143}^{\text{dust}EE}$	0.1005	$0.1004 \pm 0.0068$	$D_{2000}$	229.96	$229.9 \pm 1.8$	$\chi_{\text{plik}}^2$	2435.0	$2454.4 \pm 6.9$
$A_{143 \times 217}^{\text{dust}EE}$	0.2241	$0.225 \pm 0.048$	$n_{s,0.002}$	0.9659	$0.9662 \pm 0.0080$	$\chi_{\text{prior}}^2$	7.1	$19.6 \pm 5.6$
$A_{217}^{\text{dust}EE}$	0.650	$0.66 \pm 0.13$	$Y_P$	0.2460	$0.247 \pm 0.014$	$\chi_{\text{CMB}}^2$	12940.1	$12960.7 \pm 6.8$
$A_{100}^{\text{dust}TE}$	0.1410	$0.142 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2473	$0.248 \pm 0.014$			
$A_{100 \times 143}^{\text{dust}TE}$	0.1311	$0.132 \pm 0.030$	Age/Gyr	13.8057	$13.803 \pm 0.042$			

Best-fit  $\chi_{\text{eff}}^2 = 12947.17$ ;  $\Delta\chi_{\text{eff}}^2 = -0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 12980.28$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.16$ ;  $R - 1 = 0.03526$

$\chi_{\text{eff}}^2$ : CMB - smica\_g30\_ftl\_full\_pp: 9.77 ( $\Delta$  -0.00) lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10495.28 ( $\Delta$  -0.01) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.02 ( $\Delta$  0.11)

### 23.12 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_H070p6

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022358	$0.02234 \pm 0.00022$	$A_{100 \times 217}^{\text{dustTE}}$	0.302	$0.303 \pm 0.084$	$z_*$	1090.126	$1090.16 \pm 0.44$
$\Omega_c h^2$	0.11943	$0.1194 \pm 0.0014$	$A_{143}^{\text{dustTE}}$	0.153	$0.155 \pm 0.054$	$r_*$	144.567	$144.57 \pm 0.33$
$100\theta_{\text{MC}}$	1.04105	$1.04104 \pm 0.00059$	$A_{143 \times 217}^{\text{dustTE}}$	0.338	$0.339 \pm 0.080$	$100\theta_*$	1.041077	$1.04107 \pm 0.00033$
$\tau$	0.0835	$0.083 \pm 0.018$	$A_{217}^{\text{dustTE}}$	1.677	$1.67 \pm 0.25$	$D_A/\text{Gpc}$	13.8863	$13.887 \pm 0.031$
$Y_P$	0.2513	$0.252 \pm 0.014$	$c_{100}$	0.99817	$0.99816 \pm 0.00077$	$z_{\text{drag}}$	1060.05	$1060.05 \pm 0.85$
$\ln(10^{10} A_s)$	3.1022	$3.103 \pm 0.036$	$c_{217}$	0.99602	$0.9960 \pm 0.0014$	$r_{\text{drag}}$	147.240	$147.25 \pm 0.34$
$n_s$	0.9682	$0.9682 \pm 0.0079$	$H_0$	67.59	$67.57 \pm 0.75$	$k_D$	0.140462	$0.14042 \pm 0.00042$
$y_{\text{cal}}$	1.00030	$1.0005 \pm 0.0025$	$\Omega_\Lambda$	0.6882	$0.6879 \pm 0.0095$	$100\theta_D$	0.161066	$0.16110 \pm 0.00048$
$A_{217}^{\text{CIB}}$	67.6	$64.2 \pm 6.6$	$\Omega_m$	0.3118	$0.3121 \pm 0.0095$	$z_{\text{eq}}$	3388.3	$3388 \pm 32$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.04	—	$\Omega_m h^2$	0.14243	$0.1424 \pm 0.0013$	$k_{\text{eq}}$	0.010341	$0.010342 \pm 0.000098$
$A_{143}^{\text{tSZ}}$	7.23	$5.3 \pm 1.9$	$\Omega_m h^3$	0.09626	$0.09624 \pm 0.00057$	$100\theta_{\text{eq}}$	0.8159	$0.8158 \pm 0.0062$
$A_{100}^{\text{PS}}$	258.0	$262 \pm 28$	$\sigma_8$	0.8342	$0.835 \pm 0.015$	$100\theta_{s,\text{eq}}$	0.45073	$0.4507 \pm 0.0032$
$A_{143}^{\text{PS}}$	39.5	$44 \pm 8$	$\sigma_8 \Omega_m^{0.5}$	0.4659	$0.4662 \pm 0.0097$	$r_{\text{drag}}/D_V(0.57)$	0.07155	$0.07154 \pm 0.00052$
$A_{143 \times 217}^{\text{PS}}$	34.1	$40 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	0.6234	$0.624 \pm 0.011$	$H(0.57)$	93.046	$93.04 \pm 0.38$
$A_{217}^{\text{PS}}$	97.4	$98 \pm 10$	$\sigma_8/h^{0.5}$	1.0148	$1.015 \pm 0.017$	$D_A(0.57)$	1387.5	$1388 \pm 10$
$A^{\text{kSZ}}$	0.00	$< 4.38$	$\langle d^2 \rangle^{1/2}$	2.5043	$2.505 \pm 0.039$	$F_{\text{AP}}(0.57)$	0.67611	$0.6762 \pm 0.0024$
$A_{100}^{\text{dustTT}}$	7.40	$7.5 \pm 1.9$	$z_{\text{re}}$	10.47	$10.4^{+1.8}_{-1.5}$	$f\sigma_8(0.57)$	0.4851	$0.4853 \pm 0.0084$
$A_{143}^{\text{dustTT}}$	9.05	$9.0 \pm 1.9$	$10^9 A_s$	2.225	$2.227 \pm 0.079$	$\sigma_8(0.57)$	0.6205	$0.621 \pm 0.012$
$A_{143 \times 217}^{\text{dustTT}}$	17.42	$17.1 \pm 4.1$	$10^9 A_s e^{-2\tau}$	1.8827	$1.884 \pm 0.013$	$f_{2000}^{143}$	29.80	$30.1 \pm 3.0$
$A_{217}^{\text{dustTT}}$	81.5	$81.7 \pm 7.4$	$D_{40}$	1235.5	$1237 \pm 16$	$f_{2000}^{143 \times 217}$	32.60	$32.7 \pm 2.2$
$A_{100}^{\text{dustEE}}$	0.0813	$0.0814 \pm 0.0057$	$D_{220}$	5728.0	$5729 \pm 38$	$f_{2000}^{217}$	106.15	$106.3 \pm 2.1$
$A_{100 \times 143}^{\text{dustEE}}$	0.0489	$0.0490 \pm 0.0050$	$D_{810}$	2535.7	$2536 \pm 14$	$\chi_{\text{lowTEB}}^2$	10496.76	$10497.6 \pm 2.4$
$A_{100 \times 217}^{\text{dustEE}}$	0.0988	$0.099 \pm 0.032$	$D_{1420}$	814.45	$814.4 \pm 4.8$	$\chi_{\text{plik}}^2$	2431.7	$2451.3 \pm 7.0$
$A_{143}^{\text{dustEE}}$	0.1002	$0.1004 \pm 0.0068$	$D_{2000}$	230.15	$230.1 \pm 1.8$	$\chi_{\text{H070p6}}^2$	0.820	$0.88 \pm 0.41$
$A_{143 \times 217}^{\text{dustEE}}$	0.2242	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9682	$0.9682 \pm 0.0079$	$\chi_{\text{prior}}^2$	7.1	$19.4 \pm 5.5$
$A_{217}^{\text{dustEE}}$	0.645	$0.65 \pm 0.13$	$Y_P$	0.2513	$0.252 \pm 0.014$	$\chi_{\text{CMB}}^2$	12928.5	$12948.9 \pm 6.8$
$A_{100}^{\text{dustTE}}$	0.1401	$0.141 \pm 0.038$	$Y_P^{\text{BBN}}$	0.2526	$0.253 \pm 0.014$			
$A_{100 \times 143}^{\text{dustTE}}$	0.1313	$0.132 \pm 0.029$	Age/Gyr	13.7926	$13.794 \pm 0.041$			

Best-fit  $\chi_{\text{eff}}^2 = 12936.39$ ;  $\Delta\chi_{\text{eff}}^2 = -0.08$ ;  $\bar{\chi}_{\text{eff}}^2 = 12969.14$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.39$ ;  $R - 1 = 0.01089$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10496.76 ( $\Delta$  -0.25) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2431.70 ( $\Delta$  -0.06) Hubble - H070p6: 0.82 ( $\Delta$  -0.08)



### 23.13 base\_yhe\_plikHM\_TTTEE\_lowTEB\_post\_lensing\_BAO\_H070p6\_JLA

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022340	$0.02234 \pm 0.00019$	$A_{143 \times 217}^{\text{dust}TE}$	0.335	$0.339 \pm 0.082$	$z_{\text{drag}}$	1059.89	$1059.91 \pm 0.79$
$\Omega_c h^2$	0.11875	$0.1188 \pm 0.0010$	$A_{217}^{\text{dust}TE}$	1.655	$1.66 \pm 0.25$	$r_{\text{drag}}$	147.446	$147.44 \pm 0.30$
$100\theta_{\text{MC}}$	1.04106	$1.04107^{+0.00058}_{-0.00052}$	$c_{100}$	0.99816	$0.99816 \pm 0.00076$	$k_D$	0.140314	$0.14031 \pm 0.00037$
$\tau$	0.0669	$0.067 \pm 0.012$	$c_{217}$	0.99607	$0.9960 \pm 0.0015$	$100\theta_D$	0.161026	$0.16104 \pm 0.00048$
$Y_P$	0.2492	$0.249^{+0.014}_{-0.013}$	$H_0$	67.82	$67.81 \pm 0.53$	$z_{\text{eq}}$	3371.5	$3372 \pm 23$
$\ln(10^{10} A_s)$	3.0663	$3.066 \pm 0.024$	$\Omega_\Lambda$	0.6918	$0.6916 \pm 0.0065$	$k_{\text{eq}}$	0.010290	$0.010292 \pm 0.000071$
$n_s$	0.9686	$0.9683^{+0.0063}_{-0.0075}$	$\Omega_m$	0.3082	$0.3084 \pm 0.0065$	$100\theta_{\text{eq}}$	0.81883	$0.8188^{+0.0042}_{-0.0047}$
$y_{\text{cal}}$	1.00007	$1.0001 \pm 0.0025$	$\Omega_m h^2$	0.14173	$0.14176 \pm 0.00097$	$100\theta_{s,\text{eq}}$	0.45230	$0.4523 \pm 0.0022$
$A_{217}^{\text{CIB}}$	68.1	$64.6 \pm 6.5$	$\Omega_m h^3$	0.09612	$0.09612 \pm 0.00054$	$r_{\text{drag}}/D_V(0.57)$	0.071760	$0.07176 \pm 0.00036$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$\sigma_8$	0.8173	$0.8170 \pm 0.0096$	$H(0.57)$	93.106	$93.11 \pm 0.30$
$A_{143}^{\text{tSZ}}$	7.32	$5.2 \pm 2.0$	$\sigma_8 \Omega_m^{0.5}$	0.4537	$0.4537 \pm 0.0060$	$D_A(0.57)$	1384.7	$1384.8 \pm 7.5$
$A_{100}^{\text{PS}}$	258.1	$264 \pm 28$	$\sigma_8 \Omega_m^{0.25}$	0.6090	$0.6088 \pm 0.0069$	$F_{\text{AP}}(0.57)$	0.67519	$0.6752 \pm 0.0017$
$A_{143}^{\text{PS}}$	39.1	$44 \pm 8$	$\sigma_8/h^{0.5}$	0.9925	$0.992 \pm 0.011$	$f\sigma_8(0.57)$	0.4743	$0.4742 \pm 0.0053$
$A_{143 \times 217}^{\text{PS}}$	32.8	$39^{+9}_{-10}$	$\langle d^2 \rangle^{1/2}$	2.4521	$2.452 \pm 0.025$	$\sigma_8(0.57)$	0.6088	$0.6086 \pm 0.0078$
$A_{217}^{\text{PS}}$	96.5	$96^{+10}_{-12}$	$z_{\text{re}}$	8.93	$8.9 \pm 1.2$	$f_{2000}^{143}$	30.08	$30.5^{+3.0}_{-3.4}$
$A^{\text{kSZ}}$	0.00	$< 5.05$	$10^9 A_s$	2.146	$2.145 \pm 0.051$	$f_{2000}^{143 \times 217}$	32.78	$32.9 \pm 2.2$
$A_{100}^{\text{dust}TT}$	7.49	$7.6 \pm 1.9$	$10^9 A_s e^{-2\tau}$	1.8774	$1.878 \pm 0.012$	$f_{2000}^{217}$	106.26	$106.4^{+2.0}_{-2.3}$
$A_{143}^{\text{dust}TT}$	9.10	$9.1 \pm 1.9$	$D_{40}$	1225.8	$1227 \pm 14$	$\chi_{\text{lensing}}^2$	9.74	$10.4 \pm 1.8$
$A_{143 \times 217}^{\text{dust}TT}$	17.68	$17.3 \pm 4.1$	$D_{220}$	5724.1	$5726 \pm 38$	$\chi_{\text{lowTEB}}^2$	10494.92	$10495.4 \pm 1.3$
$A_{217}^{\text{dust}TT}$	81.7	$81.7 \pm 7.2$	$D_{810}$	2534.1	$2534 \pm 13$	$\chi_{\text{plik}}^2$	2435.4	$2454.4 \pm 6.8$
$A_{100}^{\text{dust}EE}$	0.0816	$0.0817 \pm 0.0056$	$D_{1420}$	814.76	$814.5 \pm 4.8$	$\chi_{\text{H070p6}}^2$	0.702	$0.73 \pm 0.27$
$A_{100 \times 143}^{\text{dust}EE}$	0.0492	$0.0494 \pm 0.0050$	$D_{2000}$	229.96	$229.8 \pm 1.9$	$\chi_{\text{JLA}}^2$	706.661	$706.70 \pm 0.16$
$A_{100 \times 217}^{\text{dust}EE}$	0.0998	$0.099 \pm 0.032$	$n_{s,0.002}$	0.9686	$0.9683^{+0.0063}_{-0.0075}$	$\chi_{6\text{DF}}^2$	0.0102	$0.040 \pm 0.053$
$A_{143}^{\text{dust}EE}$	0.1008	$0.1005 \pm 0.0068$	$Y_P$	0.2492	$0.249^{+0.014}_{-0.013}$	$\chi_{\text{MGS}}^2$	1.407	$1.46 \pm 0.48$
$A_{143 \times 217}^{\text{dust}EE}$	0.2227	$0.225 \pm 0.047$	$Y_P^{\text{BBN}}$	0.2506	$0.251^{+0.014}_{-0.013}$	$\chi_{\text{DR11CMass}}^2$	2.412	$2.74 \pm 0.46$
$A_{217}^{\text{dust}EE}$	0.652	$0.66 \pm 0.13$	Age/Gyr	13.7912	$13.791 \pm 0.034$	$\chi_{\text{DR11LOWZ}}^2$	0.483	$0.59 \pm 0.45$
$A_{100}^{\text{dust}TE}$	0.1411	$0.142 \pm 0.039$	$z_*$	1090.003	$1090.02 \pm 0.43$	$\chi_{\text{prior}}^2$	7.3	$19.7 \pm 5.6$
$A_{100 \times 143}^{\text{dust}TE}$	0.1318	$0.133 \pm 0.030$	$r_*$	144.765	$144.76 \pm 0.27$	$\chi_{\text{CMB}}^2$	12940.0	$12960.2 \pm 6.6$
$A_{100 \times 217}^{\text{dust}TE}$	0.304	$0.303 \pm 0.083$	$100\theta_*$	1.041144	$1.04115 \pm 0.00029$	$\chi_{\text{BAO}}^2$	4.312	$4.83 \pm 0.68$
$A_{143}^{\text{dust}TE}$	0.152	$0.156 \pm 0.054$	$D_A/\text{Gpc}$	13.9044	$13.904 \pm 0.027$			

Best-fit  $\chi_{\text{eff}}^2 = 13658.97$ ;  $\Delta\chi_{\text{eff}}^2 = -0.07$ ;  $\bar{\chi}_{\text{eff}}^2 = 13692.15$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 1.05$ ;  $R - 1 = 0.04496$

$\chi_{\text{eff}}^2$ : BAO - 6DF: 0.01 ( $\Delta$  0.00) MGS: 1.41 ( $\Delta$  0.00) DR11CMass: 2.41 ( $\Delta$  0.00) DR11LOWZ: 0.48 ( $\Delta$  0.00) CMB - smica\_g30\_ftl\_full\_pp: 9.74 ( $\Delta$  -0.00) low1.SMW.70\_dx11d.2014.10.03

10494.92 ( $\Delta$  -0.30) plik\_dx11dr2\_HM\_v18\_TTTEEE: 2435.36 ( $\Delta$  0.17) Hubble - H070p6: 0.70 ( $\Delta$  -0.02) SN - JLA December\_2013: 706.66 ( $\Delta$  0.00)

### 23.14 base\_yhe\_plikHM\_TTTEEE\_lowTEB\_post\_zre6p5

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02231 \pm 0.00022$	$A_{100 \times 143}^{\text{dust}TE}$	$0.132 \pm 0.029$	$Y_P^{\text{BBN}}$	$0.252 \pm 0.014$
$\Omega_c h^2$	$0.1197 \pm 0.0015$	$A_{100 \times 217}^{\text{dust}TE}$	$0.303 \pm 0.084$	Age/Gyr	$13.801 \pm 0.041$
$100\theta_{\text{MC}}$	$1.04096 \pm 0.00059$	$A_{143}^{\text{dust}TE}$	$0.155 \pm 0.054$	$z_*$	$1090.18 \pm 0.44$
$\tau$	$0.082 \pm 0.017$	$A_{143 \times 217}^{\text{dust}TE}$	$0.339 \pm 0.080$	$r_*$	$144.54 \pm 0.33$
$Y_P$	$0.250 \pm 0.014$	$A_{217}^{\text{dust}TE}$	$1.67 \pm 0.25$	$100\theta_*$	$1.04103 \pm 0.00034$
$\ln(10^{10} A_s)$	$3.100 \pm 0.034$	$c_{100}$	$0.99816 \pm 0.00077$	$D_A/\text{Gpc}$	$13.884 \pm 0.031$
$n_s$	$0.9670 \pm 0.0080$	$c_{217}$	$0.9960 \pm 0.0014$	$z_{\text{drag}}$	$1059.94 \pm 0.86$
$y_{\text{cal}}$	$1.0005 \pm 0.0025$	$H_0$	$67.43 \pm 0.76$	$r_{\text{drag}}$	$147.22 \pm 0.34$
$A_{217}^{\text{CIB}}$	$64.1 \pm 6.6$	$\Omega_\Lambda$	$0.6860 \pm 0.0098$	$k_D$	$0.14048 \pm 0.00043$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$\Omega_m$	$0.3140 \pm 0.0098$	$100\theta_D$	$0.16108 \pm 0.00048$
$A_{143}^{\text{tSZ}}$	$5.3 \pm 1.9$	$\Omega_m h^2$	$0.1427 \pm 0.0014$	$z_{\text{eq}}$	$3394 \pm 32$
$A_{100}^{\text{PS}}$	$262 \pm 28$	$\Omega_m h^3$	$0.09618 \pm 0.00057$	$k_{\text{eq}}$	$0.010358 \pm 0.000099$
$A_{143}^{\text{PS}}$	$44 \pm 8$	$\sigma_8$	$0.834 \pm 0.014$	$100\theta_{\text{eq}}$	$0.8147 \pm 0.0063$
$A_{143 \times 217}^{\text{PS}}$	$40 \pm 10$	$\sigma_8 \Omega_m^{0.5}$	$0.4674 \pm 0.0097$	$100\theta_{\text{s,eq}}$	$0.4502 \pm 0.0032$
$A_{217}^{\text{PS}}$	$98 \pm 10$	$\sigma_8 \Omega_m^{0.25}$	$0.624 \pm 0.011$	$r_{\text{drag}}/D_V(0.57)$	$0.07144 \pm 0.00053$
$A^{\text{kSZ}}$	$< 4.35$	$\sigma_8/h^{0.5}$	$1.016 \pm 0.017$	$H(0.57)$	$92.97 \pm 0.39$
$A_{100}^{\text{dust}TT}$	$7.5 \pm 1.9$	$\langle d^2 \rangle^{1/2}$	$2.508 \pm 0.038$	$D_A(0.57)$	$1390 \pm 11$
$A_{143}^{\text{dust}TT}$	$9.0 \pm 1.9$	$z_{\text{re}}$	$10.3 \pm 1.5$	$F_{\text{AP}}(0.57)$	$0.6766 \pm 0.0025$
$A_{143 \times 217}^{\text{dust}TT}$	$17.1 \pm 4.1$	$10^9 A_s$	$2.222^{+0.074}_{-0.086}$	$f\sigma_8(0.57)$	$0.4856 \pm 0.0082$
$A_{217}^{\text{dust}TT}$	$81.8 \pm 7.4$	$10^9 A_s e^{-2\tau}$	$1.884 \pm 0.013$	$\sigma_8(0.57)$	$0.620^{+0.011}_{-0.013}$
$A_{100}^{\text{dust}EE}$	$0.0812 \pm 0.0057$	$D_{40}$	$1239 \pm 16$	$f_{2000}^{143}$	$30.1 \pm 3.0$
$A_{100 \times 143}^{\text{dust}EE}$	$0.0489 \pm 0.0050$	$D_{220}$	$5728 \pm 38$	$f_{2000}^{143 \times 217}$	$32.7 \pm 2.2$
$A_{100 \times 217}^{\text{dust}EE}$	$0.0995 \pm 0.032$	$D_{810}$	$2536 \pm 14$	$f_{2000}^{217}$	$106.2 \pm 2.1$
$A_{143}^{\text{dust}EE}$	$0.1002 \pm 0.0069$	$D_{1420}$	$814.3 \pm 4.8$	$\chi_{\text{lowTEB}}^2$	$10497.6 \pm 2.4$
$A_{143 \times 217}^{\text{dust}EE}$	$0.223 \pm 0.047$	$D_{2000}$	$230.1 \pm 1.8$	$\chi_{\text{plik}}^2$	$2451.2 \pm 7.0$
$A_{217}^{\text{dust}EE}$	$0.65 \pm 0.13$	$n_{\text{s},0.002}$	$0.9670 \pm 0.0080$	$\chi_{\text{prior}}^2$	$19.3 \pm 5.5$
$A_{100}^{\text{dust}TE}$	$0.141 \pm 0.038$	$Y_P$	$0.250 \pm 0.014$	$\chi_{\text{CMB}}^2$	$12948.9 \pm 6.8$

$$\bar{\chi}_{\text{eff}}^2 = 12968.22; \Delta\bar{\chi}_{\text{eff}}^2 = 0.54; R - 1 = 0.01017$$

### 23.15 base\_yhe\_plikHM\_TE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022400	$0.02239 \pm 0.00032$	$\sigma_8$	0.8071	$0.807^{+0.019}_{-0.021}$	$D_A/\text{Gpc}$	13.925	$13.927 \pm 0.052$
$\Omega_c h^2$	0.11772	$0.1177 \pm 0.0020$	$\sigma_8 \Omega_m^{0.5}$	0.4437	$0.444 \pm 0.015$	$z_{\text{drag}}$	1059.93	$1059.8 \pm 2.0$
$100\theta_{\text{MC}}$	1.04111	$1.0410 \pm 0.0017$	$\sigma_8 \Omega_m^{0.25}$	0.5984	$0.599 \pm 0.016$	$r_{\text{drag}}$	147.66	$147.68 \pm 0.55$
$\tau$	0.0606	$0.061 \pm 0.021$	$\sigma_8/h^{0.5}$	0.9769	$0.978 \pm 0.025$	$k_D$	0.14020	$0.1404 \pm 0.0015$
$Y_P$	0.2476	$0.242^{+0.051}_{-0.043}$	$\langle d^2 \rangle^{1/2}$	2.405	$2.407 \pm 0.060$	$100\theta_D$	0.16091	$0.1607 \pm 0.0019$
$\ln(10^{10} A_s)$	3.0460	$3.047 \pm 0.044$	$z_{\text{re}}$	8.28	$8.2^{+2.2}_{-1.9}$	$z_{\text{eq}}$	3348.4	$3349 \pm 45$
$n_s$	0.9743	$0.974 \pm 0.015$	$10^9 A_s$	2.103	$2.106^{+0.088}_{-0.10}$	$k_{\text{eq}}$	0.010220	$0.01022 \pm 0.00014$
$y_{\text{cal}}$	1.00003	$1.0002 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8630	$1.864 \pm 0.019$	$100\theta_{\text{eq}}$	0.8233	$0.8232 \pm 0.0089$
$A_{100}^{\text{dustTE}}$	0.1352	$0.137 \pm 0.038$	$D_{40}$	1203.1	$1205 \pm 32$	$100\theta_{s,\text{eq}}$	0.45456	$0.4545 \pm 0.0046$
$A_{100 \times 143}^{\text{dustTE}}$	0.1330	$0.133 \pm 0.029$	$D_{220}$	5680	$5682 \pm 65$	$r_{\text{drag}}/D_V(0.57)$	0.07210	$0.07208 \pm 0.00082$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.304 \pm 0.085$	$D_{810}$	2524.5	$2528 \pm 34$	$H(0.57)$	93.27	$93.25 \pm 0.71$
$A_{143}^{\text{dustTE}}$	0.155	$0.152 \pm 0.054$	$D_{1420}$	814.6	$817 \pm 21$	$D_A(0.57)$	1379.1	$1380 \pm 17$
$A_{143 \times 217}^{\text{dustTE}}$	0.335	$0.335 \pm 0.080$	$D_{2000}$	230.2	$231.5 \pm 9.9$	$F_{\text{AP}}(0.57)$	0.67366	$0.6738 \pm 0.0036$
$A_{217}^{\text{dustTE}}$	1.636	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9743	$0.974 \pm 0.015$	$f\sigma_8(0.57)$	0.4668	$0.467 \pm 0.012$
$c_{100}$	0.99921	$0.99925 \pm 0.00099$	$Y_P$	0.2476	$0.242^{+0.051}_{-0.043}$	$\sigma_8(0.57)$	0.6026	$0.603^{+0.014}_{-0.016}$
$H_0$	68.25	$68.2 \pm 1.2$	$Y_P^{\text{BBN}}$	0.2490	$0.243^{+0.051}_{-0.043}$	$\chi_{\text{lowTEB}}^2$	10493.28	$10494.8 \pm 2.5$
$\Omega_\Lambda$	0.6978	$0.697 \pm 0.014$	Age/Gyr	13.779	$13.784 \pm 0.080$	$\chi_{\text{plikTE}}^2$	932.07	$939.4 \pm 4.5$
$\Omega_m$	0.3022	$0.303 \pm 0.014$	$z_*$	1089.77	$1089.6 \pm 1.6$	$\chi_{\text{prior}}^2$	1.82	$7.9 \pm 3.7$
$\Omega_m h^2$	0.14076	$0.1408 \pm 0.0019$	$r_*$	144.99	$145.01 \pm 0.52$	$\chi_{\text{CMB}}^2$	11425.35	$11434.2 \pm 4.4$
$\Omega_m h^3$	0.09607	$0.0960 \pm 0.0012$	$100\theta_*$	1.04123	$1.04121 \pm 0.00069$			

Best-fit  $\chi_{\text{eff}}^2 = 11427.17$ ;  $\Delta\chi_{\text{eff}}^2 = 0.01$ ;  $\bar{\chi}_{\text{eff}}^2 = 11442.04$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.87$ ;  $R - 1 = 0.00935$

$\chi_{\text{eff}}^2$ : CMB - lowL\_SMW\_70\_dx11d\_2014\_10\_03.v5c\_Ap: 10493.28 ( $\Delta$  -0.22) plik\_dx11dr2\_HM\_v18\_TE: 932.07 ( $\Delta$  0.34)

### 23.16 base\_yhe\_plikHM\_EE\_lowTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02454	$0.0245 \pm 0.0014$	$\sigma_8 \Omega_m^{0.5}$	0.4162	$0.415_{-0.037}^{+0.029}$	$z_{\text{drag}}$	1065.96	$1065.6 \pm 4.1$
$\Omega_c h^2$	0.11331	$0.1131_{-0.0052}^{+0.0046}$	$\sigma_8 \Omega_m^{0.25}$	0.5785	$0.577_{-0.035}^{+0.030}$	$r_{\text{drag}}$	146.34	$146.5 \pm 1.2$
$100\theta_{\text{MC}}$	1.04184	$1.0417 \pm 0.0024$	$\sigma_8/h^{0.5}$	0.9483	$0.946_{-0.050}^{+0.043}$	$k_D$	0.14112	$0.1413 \pm 0.0017$
$\tau$	0.0704	$0.070 \pm 0.023$	$\langle d^2 \rangle^{1/2}$	2.346	$2.343_{-0.093}^{+0.077}$	$100\theta_D$	0.16049	$0.1602 \pm 0.0026$
$Y_P$	0.295	$0.284_{-0.054}^{+0.064}$	$z_{\text{re}}$	8.85	$8.6 \pm 2.1$	$z_{\text{eq}}$	3294	$3288_{-100}^{+91}$
$\ln(10^{10} A_s)$	3.0841	$3.083 \pm 0.048$	$10^9 A_s$	2.185	$2.184_{-0.12}^{+0.099}$	$k_{\text{eq}}$	0.010054	$0.01004_{-0.00031}^{+0.00028}$
$n_s$	0.9969	$0.997 \pm 0.019$	$10^9 A_s e^{-2\tau}$	1.8980	$1.898 \pm 0.026$	$100\theta_{\text{eq}}$	0.8401	$0.842 \pm 0.020$
$y_{\text{cal}}$	0.99985	$0.99998 \pm 0.0025$	$D_{40}$	1201.1	$1203 \pm 38$	$100\theta_{s,\text{eq}}$	0.4617	$0.4624 \pm 0.0097$
$A_{100}^{\text{dustEE}}$	0.0826	$0.0826 \pm 0.0059$	$D_{220}$	5950	$5958 \pm 210$	$r_{\text{drag}}/D_V(0.57)$	0.07395	$0.0741 \pm 0.0018$
$A_{100 \times 143}^{\text{dustEE}}$	0.0498	$0.0499 \pm 0.0054$	$D_{810}$	2566	$2570 \pm 52$	$H(0.57)$	95.65	$95.7_{-2.0}^{+1.8}$
$A_{100 \times 217}^{\text{dustEE}}$	0.0998	$0.099 \pm 0.032$	$D_{1420}$	826.9	$831 \pm 31$	$D_A(0.57)$	1326.7	$1327 \pm 40$
$A_{143}^{\text{dustEE}}$	0.1008	$0.1013 \pm 0.0072$	$D_{2000}$	232.9	$235 \pm 14$	$F_{\text{AP}}(0.57)$	0.6646	$0.6646_{-0.0087}^{+0.0070}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2244	$0.224 \pm 0.047$	$n_{s,0.002}$	0.9969	$0.997 \pm 0.019$	$f\sigma_8(0.57)$	0.4551	$0.453 \pm 0.022$
$A_{217}^{\text{dustEE}}$	0.654	$0.65 \pm 0.13$	$Y_P$	0.295	$0.284_{-0.054}^{+0.064}$	$\sigma_8(0.57)$	0.6094	$0.608_{-0.020}^{+0.018}$
$H_0$	71.92	$72.0 \pm 3.0$	$Y_P^{\text{BBN}}$	0.296	$0.285_{-0.054}^{+0.064}$	$\chi_{\text{lowTEB}}^2$	10492.43	$10494.2 \pm 2.3$
$\Omega_\Lambda$	0.7322	$0.732_{-0.024}^{+0.033}$	Age/Gyr	13.522	$13.53 \pm 0.19$	$\chi_{\text{plikEE}}^2$	751.75	$759.7 \pm 4.7$
$\Omega_m$	0.2678	$0.268_{-0.033}^{+0.024}$	$z_*$	1088.78	$1088.6 \pm 2.6$	$\chi_{\text{prior}}^2$	3.96	$8.3 \pm 3.6$
$\Omega_m h^2$	0.13849	$0.1382_{-0.0043}^{+0.0038}$	$r_*$	144.34	$144.4 \pm 1.1$	$\chi_{\text{CMB}}^2$	11244.18	$11254.0 \pm 4.8$
$\Omega_m h^3$	0.09960	$0.0995 \pm 0.0029$	$100\theta_*$	1.04059	$1.0406 \pm 0.0011$			
$\sigma_8$	0.8042	$0.802_{-0.031}^{+0.027}$	$D_A/\text{Gpc}$	13.871	$13.88 \pm 0.11$			

Best-fit  $\chi_{\text{eff}}^2 = 11248.14$ ;  $\Delta\chi_{\text{eff}}^2 = -0.64$ ;  $\bar{\chi}_{\text{eff}}^2 = 11262.26$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.45$ ;  $R - 1 = 0.00801$

$\chi_{\text{eff}}^2$ : CMB - lowl\_SMW\_70\_dx11d\_2014\_10\_03\_v5c\_Ap: 10492.43 ( $\Delta$  -1.18) plik\_dx11dr2\_HM\_v18\_EE: 751.75 ( $\Delta$  0.55)

### 23.17 base\_yhe\_plikHM\_TE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.021827	$0.02192^{+0.00032}_{-0.00039}$	$\sigma_8$	0.7956	$0.798 \pm 0.018$	$D_A/\text{Gpc}$	13.961	$13.942 \pm 0.051$
$\Omega_c h^2$	0.11973	$0.1198 \pm 0.0022$	$\sigma_8 \Omega_m^{0.5}$	0.4550	$0.454 \pm 0.017$	$z_{\text{drag}}$	1055.85	$1056.8^{+1.4}_{-2.6}$
$100\theta_{\text{MC}}$	1.03773	$1.0385^{+0.0012}_{-0.0022}$	$\sigma_8 \Omega_m^{0.25}$	0.6017	$0.602 \pm 0.016$	$r_{\text{drag}}$	148.03	$147.85 \pm 0.55$
$\tau$	0.0519	$0.052 \pm 0.019$	$\sigma_8/h^{0.5}$	0.9798	$0.980 \pm 0.024$	$k_D$	0.14301	$0.1424^{+0.0019}_{-0.0012}$
$Y_P$	0.1518	$< 0.195$	$\langle d^2 \rangle^{1/2}$	2.492	$2.477 \pm 0.071$	$100\theta_D$	0.15735	$0.1583^{+0.0012}_{-0.0024}$
$\ln(10^{10} A_s)$	3.0295	$3.029 \pm 0.040$	$z_{\text{re}}$	7.17	$7.1^{+2.2}_{-1.7}$	$z_{\text{eq}}$	3382.9	$3386 \pm 49$
$n_s$	0.9384	$0.945^{+0.015}_{-0.020}$	$10^9 A_s$	2.069	$2.069 \pm 0.083$	$k_{\text{eq}}$	0.010325	$0.01034 \pm 0.00015$
$y_{\text{cal}}$	1.00014	$0.99998 \pm 0.0025$	$10^9 A_s e^{-2\tau}$	1.8648	$1.865 \pm 0.019$	$100\theta_{\text{eq}}$	0.8128	$0.8132 \pm 0.0098$
$A_{100}^{\text{dustTE}}$	0.1342	$0.137 \pm 0.038$	$D_{40}$	1285.5	$1271^{+47}_{-39}$	$100\theta_{s,\text{eq}}$	0.44945	$0.4496 \pm 0.0050$
$A_{100 \times 143}^{\text{dustTE}}$	0.1398	$0.134 \pm 0.029$	$D_{220}$	5796	$5766 \pm 73$	$r_{\text{drag}}/D_V(0.57)$	0.07072	$0.07089^{+0.00083}_{-0.0010}$
$A_{100 \times 217}^{\text{dustTE}}$	0.299	$0.305 \pm 0.084$	$D_{810}$	2559.0	$2547 \pm 33$	$H(0.57)$	91.82	$92.09^{+0.59}_{-0.91}$
$A_{143}^{\text{dustTE}}$	0.159	$0.155 \pm 0.054$	$D_{1420}$	839.6	$832^{+23}_{-18}$	$D_A(0.57)$	1414.0	$1409^{+23}_{-17}$
$A_{143 \times 217}^{\text{dustTE}}$	0.341	$0.336 \pm 0.081$	$D_{2000}$	243.8	$240^{+11}_{-8.0}$	$F_{\text{AP}}(0.57)$	0.67993	$0.6793 \pm 0.0043$
$A_{217}^{\text{dustTE}}$	1.653	$1.65 \pm 0.26$	$n_{s,0.002}$	0.9384	$0.945^{+0.015}_{-0.020}$	$f\sigma_8(0.57)$	0.4663	$0.467 \pm 0.012$
$c_{100}$	0.99935	$0.9992 \pm 0.0010$	$Y_P$	0.1518	$0.174^{+0.033}_{-0.066}$	$\sigma_8(0.57)$	0.5883	$0.591 \pm 0.013$
$H_0$	65.94	$66.3^{+1.2}_{-1.5}$	$Y_P^{\text{BBN}}$	0.1527	$0.175^{+0.033}_{-0.066}$	$\chi_{\text{lowEB}}^2$	5430.72	$5431.7 \pm 1.2$
$\Omega_\Lambda$	0.6729	$0.675 \pm 0.017$	Age/Gyr	13.948	$13.91^{+0.10}_{-0.067}$	$\chi_{\text{plikTE}}^2$	929.32	$937.0 \pm 4.1$
$\Omega_m$	0.3271	$0.325 \pm 0.017$	$z_*$	1087.15	$1087.9^{+1.0}_{-1.9}$	$\chi_{\text{prior}}^2$	1.83	$7.8 \pm 3.6$
$\Omega_m h^2$	0.14221	$0.1424 \pm 0.0021$	$r_*$	145.22	$145.06 \pm 0.52$	$\chi_{\text{CMB}}^2$	6360.03	$6368.7 \pm 4.3$
$\Omega_m h^3$	0.09377	$0.09432^{+0.00090}_{-0.0015}$	$100\theta_*$	1.04018	$1.04041^{+0.00066}_{-0.00077}$			

Best-fit  $\chi_{\text{eff}}^2 = 6361.86$ ;  $\Delta\chi_{\text{eff}}^2 = -2.03$ ;  $\bar{\chi}_{\text{eff}}^2 = 6376.48$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = -1.37$ ;  $R - 1 = 0.00468$

$\chi_{\text{eff}}^2$ : CMB - lowl\_QU\_70\_dx11d.2014.10.03\_v5c\_Ap: 5430.72 ( $\Delta$  -0.05) plik\_dx11dr2\_HM\_v18\_TE: 929.32 ( $\Delta$  -1.92)

### 23.18 base\_yhe\_plikHM\_EE\_lowEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.02277	$0.0235^{+0.0014}_{-0.0016}$	$\sigma_8 \Omega_m^{0.5}$	0.4366	$0.430^{+0.034}_{-0.039}$	$z_{\text{drag}}$	1057.68	$1060.7^{+3.8}_{-5.0}$
$\Omega_c h^2$	0.1159	$0.1154 \pm 0.0051$	$\sigma_8 \Omega_m^{0.25}$	0.5878	$0.583 \pm 0.032$	$r_{\text{drag}}$	148.00	$147.2^{+1.2}_{-1.0}$
$100\theta_{\text{MC}}$	1.03647	$1.0382^{+0.0019}_{-0.0031}$	$\sigma_8/h^{0.5}$	0.9620	$0.955 \pm 0.047$	$k_D$	0.14393	$0.1432^{+0.0020}_{-0.0017}$
$\tau$	0.0575	$0.058 \pm 0.020$	$\langle d^2 \rangle^{1/2}$	2.478	$2.43 \pm 0.11$	$100\theta_D$	0.15585	$0.1574^{+0.0020}_{-0.0030}$
$Y_P$	0.146	$< 0.223$	$z_{\text{re}}$	7.42	$7.4 \pm 1.9$	$z_{\text{eq}}$	3314	$3318 \pm 96$
$\ln(10^{10} A_s)$	3.0600	$3.062 \pm 0.042$	$10^9 A_s$	2.133	$2.140 \pm 0.090$	$k_{\text{eq}}$	0.010115	$0.01013 \pm 0.00029$
$n_s$	0.9434	$0.960^{+0.022}_{-0.029}$	$10^9 A_s e^{-2\tau}$	1.9008	$1.906 \pm 0.026$	$100\theta_{\text{eq}}$	0.8270	$0.830 \pm 0.022$
$y_{\text{cal}}$	0.99975	$1.0000 \pm 0.0024$	$D_{40}$	1318	$1287^{+64}_{-51}$	$100\theta_{s,\text{eq}}$	0.4561	$0.457 \pm 0.010$
$A_{100}^{\text{dustEE}}$	0.0794	$0.0799 \pm 0.0061$	$D_{220}$	6063	$6059 \pm 220$	$r_{\text{drag}}/D_V(0.57)$	0.07171	$0.0724 \pm 0.0021$
$A_{100 \times 143}^{\text{dustEE}}$	0.0463	$0.0469 \pm 0.0056$	$D_{810}$	2626	$2609^{+55}_{-48}$	$H(0.57)$	92.61	$93.7^{+1.8}_{-2.3}$
$A_{100 \times 217}^{\text{dustEE}}$	0.1031	$0.099 \pm 0.033$	$D_{1420}$	866.7	$854^{+32}_{-26}$	$D_A(0.57)$	1390.2	$1369 \pm 48$
$A_{143}^{\text{dustEE}}$	0.0974	$0.0979 \pm 0.0075$	$D_{2000}$	253.8	$247^{+15}_{-12}$	$F_{\text{AP}}(0.57)$	0.6742	$0.6715^{+0.0088}_{-0.010}$
$A_{143 \times 217}^{\text{dustEE}}$	0.2203	$0.223 \pm 0.047$	$n_{s,0.002}$	0.9434	$0.960^{+0.022}_{-0.029}$	$f\sigma_8(0.57)$	0.4583	$0.456 \pm 0.022$
$A_{217}^{\text{dustEE}}$	0.642	$0.64 \pm 0.13$	$Y_P$	0.146	$0.197^{+0.043}_{-0.087}$	$\sigma_8(0.57)$	0.5903	$0.594^{+0.014}_{-0.017}$
$H_0$	67.64	$69.1 \pm 3.4$	$Y_P^{\text{BBN}}$	0.147	$0.198^{+0.043}_{-0.087}$	$\chi^2_{\text{lowEB}}$	5430.78	$5431.8 \pm 1.5$
$\Omega_\Lambda$	0.6955	$0.705^{+0.041}_{-0.032}$	Age/Gyr	13.873	$13.74^{+0.24}_{-0.21}$	$\chi^2_{\text{plikEE}}$	750.00	$758.2 \pm 4.4$
$\Omega_m$	0.3045	$0.295^{+0.032}_{-0.041}$	$z_*$	1085.58	$1086.6^{+2.1}_{-2.7}$	$\chi^2_{\text{prior}}$	3.17	$7.6 \pm 3.4$
$\Omega_m h^2$	0.13933	$0.1395 \pm 0.0040$	$r_*$	145.49	$144.93^{+0.98}_{-0.88}$	$\chi^2_{\text{CMB}}$	6180.79	$6190.0 \pm 4.6$
$\Omega_m h^3$	0.09425	$0.0963^{+0.0025}_{-0.0035}$	$100\theta_*$	1.03885	$1.0394^{+0.0011}_{-0.0013}$			
$\sigma_8$	0.7912	$0.792 \pm 0.025$	$D_A/\text{Gpc}$	14.005	$13.94^{+0.10}_{-0.087}$			

Best-fit  $\chi^2_{\text{eff}} = 6183.95$ ;  $\Delta\chi^2_{\text{eff}} = -0.94$ ;  $\bar{\chi}^2_{\text{eff}} = 6197.61$ ;  $\Delta\bar{\chi}^2_{\text{eff}} = -0.35$ ;  $R - 1 = 0.01270$

$\chi^2_{\text{eff}}$ : CMB - lowl\_QU\_70\_dx11d.2014\_10\_03\_v5c\_Ap: 5430.78 ( $\Delta$  0.06) plik\_dx11dr2\_HM\_v18\_EE: 750.00 ( $\Delta$  -0.75)

### 23.19 base\_yhe\_plikHM\_TT\_WMAPTEB

Parameter	Best fit	68% limits	Parameter	Best fit	68% limits	Parameter	Best fit	68% limits
$\Omega_b h^2$	0.022226	$0.02226 \pm 0.00030$	$\Omega_\Lambda$	0.6844	$0.685 \pm 0.014$	$100\theta_*$	1.041071	$1.04112 \pm 0.00050$
$\Omega_c h^2$	0.11992	$0.1198 \pm 0.0022$	$\Omega_m$	0.3156	$0.315 \pm 0.014$	$D_A/\text{Gpc}$	13.8851	$13.884 \pm 0.045$
$100\theta_{\text{MC}}$	1.04093	$1.04106 \pm 0.00087$	$\Omega_m h^2$	0.14279	$0.1427 \pm 0.0020$	$z_{\text{drag}}$	1059.67	$1059.9 \pm 1.2$
$\tau$	0.0726	$0.074^{+0.012}_{-0.013}$	$\Omega_m h^3$	0.09605	$0.09616 \pm 0.00077$	$r_{\text{drag}}$	147.27	$147.25 \pm 0.50$
$Y_P$	0.2474	$0.250 \pm 0.020$	$\sigma_8$	0.8267	$0.828 \pm 0.012$	$k_D$	0.14049	$0.14041 \pm 0.00073$
$\ln(10^{10} A_s)$	3.0804	$3.084 \pm 0.025$	$\sigma_8 \Omega_m^{0.5}$	0.4644	$0.464 \pm 0.013$	$100\theta_D$	0.16105	$0.16117 \pm 0.00075$
$n_s$	0.9660	$0.967 \pm 0.011$	$\sigma_8 \Omega_m^{0.25}$	0.6196	$0.620 \pm 0.012$	$z_{\text{eq}}$	3396.9	$3395 \pm 48$
$y_{\text{cal}}$	1.00048	$1.0004 \pm 0.0025$	$\sigma_8/h^{0.5}$	1.0079	$1.009 \pm 0.017$	$k_{\text{eq}}$	0.010368	$0.01036 \pm 0.00015$
$A_{217}^{\text{CIB}}$	67.4	$64.4 \pm 6.8$	$\langle d^2 \rangle^{1/2}$	2.4878	$2.488 \pm 0.042$	$100\theta_{\text{eq}}$	0.8138	$0.8145 \pm 0.0094$
$\xi^{\text{tSZ} \times \text{CIB}}$	0.00	—	$z_{\text{re}}$	9.50	$9.6 \pm 1.1$	$100\theta_{\text{s,eq}}$	0.44977	$0.4501 \pm 0.0048$
$A_{143}^{\text{tSZ}}$	7.12	$5.0 \pm 2.0$	$10^9 A_s$	2.177	$2.186^{+0.052}_{-0.060}$	$r_{\text{drag}}/D_V(0.57)$	0.07136	$0.07144 \pm 0.00079$
$A_{100}^{\text{PS}}$	254.0	$260 \pm 29$	$10^9 A_s e^{-2\tau}$	1.8828	$1.884 \pm 0.015$	$H(0.57)$	92.87	$92.95 \pm 0.55$
$A_{143}^{\text{PS}}$	39.8	$45 \pm 9$	$D_{40}$	1234.0	$1233 \pm 21$	$D_A(0.57)$	1392.2	$1390 \pm 15$
$A_{143 \times 217}^{\text{PS}}$	33.1	$40^{+10}_{-10}$	$D_{220}$	5716.7	$5718 \pm 41$	$F_{\text{AP}}(0.57)$	0.67707	$0.6768 \pm 0.0036$
$A_{217}^{\text{PS}}$	97.6	$97 \pm 10$	$D_{810}$	2536.1	$2536 \pm 14$	$f\sigma_8(0.57)$	0.4817	$0.4821 \pm 0.0082$
$A^{\text{kSZ}}$	0.01	$< 4.89$	$D_{1420}$	814.9	$814.3 \pm 5.3$	$\sigma_8(0.57)$	0.6140	$0.6153^{+0.0085}_{-0.0096}$
$A_{100}^{\text{dustTT}}$	7.48	$7.5 \pm 1.9$	$D_{2000}$	230.18	$229.8 \pm 2.4$	$f_{2000}^{143}$	30.14	$31 \pm 4$
$A_{143}^{\text{dustTT}}$	9.08	$9.0 \pm 1.9$	$n_{\text{s},0.002}$	0.9660	$0.967 \pm 0.011$	$f_{2000}^{143 \times 217}$	32.69	$33.0 \pm 2.8$
$A_{143 \times 217}^{\text{dustTT}}$	17.64	$17.2 \pm 4.1$	$Y_P$	0.2474	$0.250 \pm 0.020$	$f_{2000}^{217}$	106.28	$106.6 \pm 2.6$
$A_{217}^{\text{dustTT}}$	82.1	$81.8 \pm 7.4$	$Y_P^{\text{BBN}}$	0.2487	$0.252 \pm 0.020$	$\chi_{\text{WMAPTEB}}^2$	19733.98	$19735.2 \pm 2.6$
$c_{100}$	0.99792	$0.99789 \pm 0.00079$	Age/Gyr	13.812	$13.803 \pm 0.058$	$\chi_{\text{plik}}^2$	764.1	$778.5 \pm 5.8$
$c_{217}$	0.99597	$0.9960 \pm 0.0015$	$z_*$	1090.18	$1090.26 \pm 0.66$	$\chi_{\text{prior}}^2$	2.07	$7.4 \pm 3.6$
$H_0$	67.26	$67.4 \pm 1.1$	$r_*$	144.554	$144.54 \pm 0.49$	$\chi_{\text{CMB}}^2$	20498.1	$20513.7 \pm 5.7$

Best-fit  $\chi_{\text{eff}}^2 = 20500.13$ ;  $\Delta\chi_{\text{eff}}^2 = -0.02$ ;  $\bar{\chi}_{\text{eff}}^2 = 20521.09$ ;  $\Delta\bar{\chi}_{\text{eff}}^2 = 0.96$ ;  $R - 1 = 0.01182$

$\chi_{\text{eff}}^2$ : CMB - bflike\_WMAP353ggf\_LFI312\_nw8: 19733.98 ( $\Delta$  -0.17) plik\_dx11dr2\_HM\_v18\_TT: 764.09 ( $\Delta$  0.01)

### 23.20 base\_yhe\_plikHM\_TT\_WMAPTEB\_post\_lensing

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02235 \pm 0.00029$	$\Omega_m$	$0.304 \pm 0.011$	$z_{\text{drag}}$	$1060.0 \pm 1.2$
$\Omega_c h^2$	$0.1181 \pm 0.0017$	$\Omega_m h^2$	$0.1411 \pm 0.0016$	$r_{\text{drag}}$	$147.59 \pm 0.42$
$100\theta_{\text{MC}}$	$1.04134 \pm 0.00083$	$\Omega_m h^3$	$0.09616 \pm 0.00076$	$k_D$	$0.14005 \pm 0.00067$
$\tau$	$0.070^{+0.011}_{-0.013}$	$\sigma_8$	$0.8185 \pm 0.0092$	$100\theta_D$	$0.16121^{+0.00073}_{-0.00082}$
$Y_P$	$0.252 \pm 0.020$	$\sigma_8 \Omega_m^{0.5}$	$0.4514 \pm 0.0087$	$z_{\text{eq}}$	$3357 \pm 38$
$\ln(10^{10} A_s)$	$3.072^{+0.022}_{-0.025}$	$\sigma_8 \Omega_m^{0.25}$	$0.6078 \pm 0.0077$	$k_{\text{eq}}$	$0.01025 \pm 0.00012$
$n_s$	$0.971 \pm 0.010$	$\sigma_8/h^{0.5}$	$0.992 \pm 0.011$	$100\theta_{\text{eq}}$	$0.8217 \pm 0.0075$
$y_{\text{cal}}$	$1.0001^{+0.0025}_{-0.0028}$	$\langle d^2 \rangle^{1/2}$	$2.446 \pm 0.027$	$100\theta_{s,\text{eq}}$	$0.4538 \pm 0.0038$
$A_{217}^{\text{CIB}}$	$64.8 \pm 6.8$	$z_{\text{re}}$	$9.2 \pm 1.1$	$r_{\text{drag}}/D_V(0.57)$	$0.07202 \pm 0.00065$
$\xi^{\text{tSZ} \times \text{CIB}}$	—	$10^9 A_s$	$2.159^{+0.046}_{-0.054}$	$H(0.57)$	$93.25 \pm 0.51$
$A_{143}^{\text{tSZ}}$	$5.0 \pm 2.0$	$10^9 A_s e^{-2\tau}$	$1.875 \pm 0.014$	$D_A(0.57)$	$1380 \pm 13$
$A_{100}^{\text{PS}}$	$261 \pm 28$	$D_{40}$	$1221 \pm 18$	$F_{\text{AP}}(0.57)$	$0.6742 \pm 0.0029$
$A_{143}^{\text{PS}}$	$45 \pm 9$	$D_{220}$	$5717 \pm 41$	$f\sigma_8(0.57)$	$0.4739 \pm 0.0054$
$A_{143 \times 217}^{\text{PS}}$	$39 \pm 10$	$D_{810}$	$2533 \pm 14$	$\sigma_8(0.57)$	$0.6108 \pm 0.0081$
$A_{217}^{\text{PS}}$	$96 \pm 10$	$D_{1420}$	$814.2 \pm 5.3$	$f_{2000}^{143}$	$31 \pm 4$
$A^{\text{kSZ}}$	$< 5.27$	$D_{2000}$	$229.6 \pm 2.4$	$f_{2000}^{143 \times 217}$	$33.3 \pm 2.9$
$A_{100}^{\text{dustTT}}$	$7.6 \pm 1.9$	$n_{s,0.002}$	$0.971 \pm 0.010$	$f_{2000}^{217}$	$106.7 \pm 2.6$
$A_{143}^{\text{dustTT}}$	$9.2 \pm 1.9$	$Y_P$	$0.252 \pm 0.020$	$\chi^2_{\text{lensing}}$	$9.9 \pm 1.5$
$A_{143 \times 217}^{\text{dustTT}}$	$17.3 \pm 4.2$	$Y_P^{\text{BBN}}$	$0.253 \pm 0.020$	$\chi^2_{\text{WMAPTEB}}$	$19733.7 \pm 2.1$
$A_{217}^{\text{dustTT}}$	$81.8 \pm 7.4$	$\text{Age/Gyr}$	$13.779 \pm 0.054$	$\chi^2_{\text{plik}}$	$780.3 \pm 7.6$
$c_{100}$	$0.99786 \pm 0.00078$	$z_*$	$1090.06 \pm 0.64$	$\chi^2_{\text{prior}}$	$7.6 \pm 3.6$
$c_{217}$	$0.9960 \pm 0.0015$	$r_*$	$144.91 \pm 0.39$	$\chi^2_{\text{CMB}}$	$20523.9 \pm 7.7$
$H_0$	$68.14 \pm 0.94$	$100\theta_*$	$1.04135 \pm 0.00045$		
$\Omega_\Lambda$	$0.696 \pm 0.011$	$D_A/\text{Gpc}$	$13.915 \pm 0.038$		

$$\bar{\chi}^2_{\text{eff}} = 20531.55; \Delta\bar{\chi}^2_{\text{eff}} = 0.79; R - 1 = 0.02408$$



### 23.21 base\_yhe\_plikHM\_TT\_WMAPTEB\_post\_BAO

Parameter	68% limits	Parameter	68% limits	Parameter	68% limits
$\Omega_b h^2$	$0.02232 \pm 0.00025$	$\Omega_m h^2$	$0.1421 \pm 0.0012$	$k_D$	$0.14024 \pm 0.00058$
$\Omega_c h^2$	$0.1191 \pm 0.0013$	$\Omega_m h^3$	$0.09624 \pm 0.00073$	$100\theta_D$	$0.16124 \pm 0.00073$
$100\theta_{MC}$	$1.04124 \pm 0.00073$	$\sigma_8$	$0.827 \pm 0.012$	$z_{eq}$	$3380 \pm 30$
$\tau$	$0.076 \pm 0.012$	$\sigma_8 \Omega_m^{0.5}$	$0.4605 \pm 0.0090$	$k_{eq}$	$0.010317 \pm 0.000091$
$Y_P$	$0.253 \pm 0.019$	$\sigma_8 \Omega_m^{0.25}$	$0.6173 \pm 0.0098$	$100\theta_{eq}$	$0.8174 \pm 0.0054$
$\ln(10^{10} A_s)$	$3.086 \pm 0.024$	$\sigma_8/h^{0.5}$	$1.005 \pm 0.015$	$100\theta_{s,eq}$	$0.4516 \pm 0.0028$
$n_s$	$0.9698 \pm 0.0083$	$\langle d^2 \rangle^{1/2}$	$2.478 \pm 0.033$	$r_{drag}/D_V(0.57)$	$0.07168 \pm 0.00043$
$y_{cal}$	$1.0005 \pm 0.0026$	$z_{re}$	$9.7 \pm 1.1$	$H(0.57)$	$93.10 \pm 0.37$
$A_{217}^{CIB}$	$64.6 \pm 6.8$	$10^9 A_s$	$2.190 \pm 0.054$	$D_A(0.57)$	$1385.7 \pm 9.0$
$\xi^{tSZ \times CIB}$	—	$10^9 A_s e^{-2\tau}$	$1.882 \pm 0.015$	$F_{AP}(0.57)$	$0.6756 \pm 0.0020$
$A_{143}^{tSZ}$	$5.0 \pm 2.0$	$D_{40}$	$1228 \pm 17$	$f\sigma_8(0.57)$	$0.4806 \pm 0.0072$
$A_{100}^{PS}$	$261 \pm 29$	$D_{220}$	$5721 \pm 41$	$\sigma_8(0.57)$	$0.6159 \pm 0.0088$
$A_{143}^{PS}$	$45 \pm 9$	$D_{810}$	$2536 \pm 14$	$f_{2000}^{143}$	$31 \pm 4$
$A_{143 \times 217}^{PS}$	$40_{-10}^{+10}$	$D_{1420}$	$814.4 \pm 5.3$	$f_{2000}^{143 \times 217}$	$33.2 \pm 2.8$
$A_{217}^{PS}$	$97 \pm 10$	$D_{2000}$	$229.8 \pm 2.4$	$f_{2000}^{217}$	$106.8 \pm 2.6$
$A^{kSZ}$	$< 5.06$	$n_{s,0.002}$	$0.9698 \pm 0.0083$	$\chi_{WMAPTEB}^2$	$19734.6 \pm 2.4$
$A_{100}^{dustTT}$	$7.5 \pm 1.9$	$Y_P$	$0.253 \pm 0.019$	$\chi_{plik}^2$	$778.5 \pm 7.3$
$A_{143}^{dustTT}$	$9.1 \pm 1.9$	$Y_P^{BBN}$	$0.254 \pm 0.019$	$\chi_{6DF}^2$	$0.061 \pm 0.082$
$A_{143 \times 217}^{dustTT}$	$17.2 \pm 4.2$	Age/Gyr	$13.789 \pm 0.043$	$\chi_{MGS}^2$	$1.38 \pm 0.56$
$A_{217}^{dustTT}$	$81.8 \pm 7.4$	$z_*$	$1090.23 \pm 0.65$	$\chi_{DR11CMASS}^2$	$2.90 \pm 0.71$
$c_{100}$	$0.99789 \pm 0.00078$	$r_*$	$144.66 \pm 0.38$	$\chi_{DR11LOWZ}^2$	$0.73 \pm 0.61$
$c_{217}$	$0.9960 \pm 0.0015$	$100\theta_*$	$1.04123 \pm 0.00042$	$\chi_{prior}^2$	$7.5 \pm 3.6$
$H_0$	$67.73 \pm 0.63$	$D_A/\text{Gpc}$	$13.894 \pm 0.037$	$\chi_{CMB}^2$	$20513.1 \pm 7.3$
$\Omega_\Lambda$	$0.6901 \pm 0.0078$	$z_{drag}$	$1060.0 \pm 1.1$	$\chi_{BAO}^2$	$5.1 \pm 1.0$
$\Omega_m$	$0.3099 \pm 0.0078$	$r_{drag}$	$147.35 \pm 0.43$		

$$\bar{\chi}_{eff}^2 = 20525.63; \Delta\bar{\chi}_{eff}^2 = 0.74; R - 1 = 0.01591$$